American MILK REVIEW

AMERICAN MILK REVIEW BUTTER REVIEW EGG & POULTRY REVIEW

CIRCULATION OVER 15,000 MILK PLANTS

STRANGE FAMILIES
A New Article on Bacteria
by **F. W. FABIAN**
STORY ON PAGE 6

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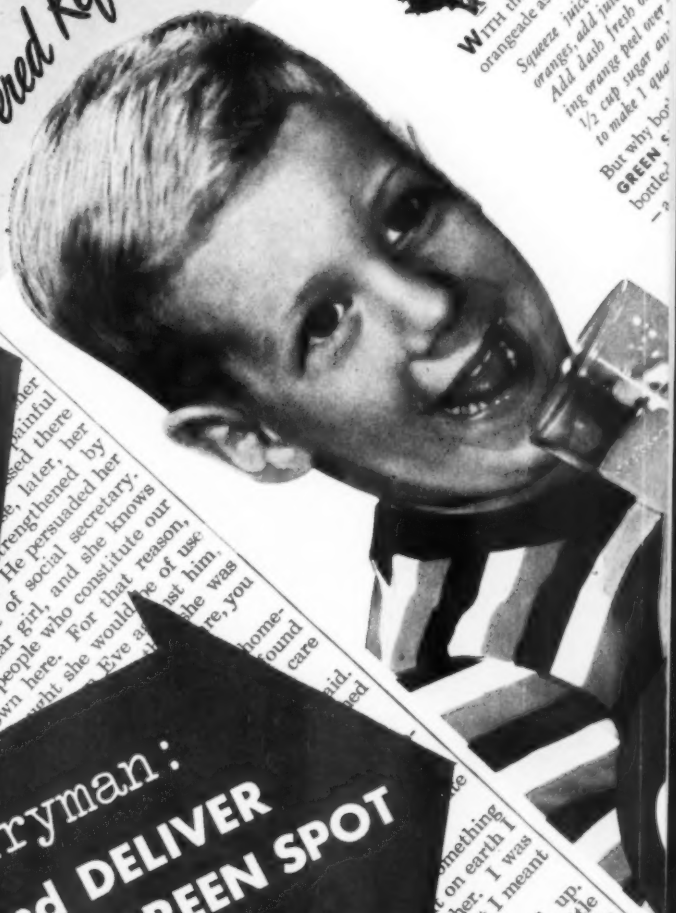

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Mid-Western Representative
GUY W. WHITCOMB
520 N. Michigan Ave.
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Phone: Superior 1043

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STRANGE FAMILIES in the BACTERIAL WORLD

F. W. FABIAN

Professor of Bacteriology and Public Health
Michigan State College, East Lansing, Mich.

ONE MAY SEE many strange creatures and freaks in the animal kingdom that live under peculiar conditions, not excluding man. The plant kingdom likewise has its share of plants that live under very unorthodox conditions. In the invisible world of bacteria, which are microscopic plants, there are many groups which have a physiology that permit them to live under conditions that other bacteria cannot survive. It is about some of these strange bacteria that we are particularly interested in this article.

All bacteria, like Gaul, may be divided into three parts or groups as regards their temperature relationships. The scientific names applied to these groups are cryophilic, mesophilic and thermophic bacteria.

The Cryophilic Bacteria

The cryophilic (cryo-cold and phile-to love) bacteria are bacteria that actually love cold temperatures. They will grow at temperatures below freezing or as long as the liquid isn't frozen into a solid. Many believe that if they place milk, meat, fish, or any food in a refrigerator that it will keep almost indefinitely. Such is not the case. In a refrigerator such as is found in the modern home, the temperature usually ranges from 40 to 50 F. At this temperature most food will spoil in from three days to a week because that is about optimum for most cryophilic bacteria. That is why it is necessary to buy deep freeze boxes to keep food over a longer period of time.

Even with deep freeze boxes the food must be handled just right or spoilage results. Futhermore each type of food such as meat, vegetables, fruits, must be handled differently. The food must be cooled eventually to a point where it is solid if bacterial growth is to be prevented. For this reason food [redacted] beef, pork, mutton, poultry and even fish may be cooled from 2 to 72 hours before being frozen solid. During this time certain bacterial and enzymatic (digestive) changes are taking place which for the most part are beneficial. In fact if they weren't chilled before being frozen solidly, they would spoil much more readily because the outside of the meat would be frozen while the inside would still be warm and would stay that way for several days due to the insulating effect of the frozen outside and bacteria would grow in the warm inside and cause spoilage. Vegetable and fruits do not need this chilling because they are small and the heat is easily withdrawn from them.

The next step is freezing the foods solid to prevent further bacterial action. This is done by placing them in a quick freeze room where the temperature is from 0°F. to 15°F. or lower. The food after being frozen solid is then placed in a storage room at 0°F. to 10°F. The lower the storage temperature the longer the food will keep. However, even at 0°F. the food does not keep indefinitely. Fruits, vegetables, beef and veal, the best keeping foods should be used within 10 to 12 months and some of the poorer keeping foods, such as fish, ground meat and the like, should be used within 2 to 3 months.

The Bacteriology of Freezing

Milk kept just above freezing will support the growth of cryophilic bacteria and takes on a peculiar flavor. Cream can be kept about a year if frozen solidly without any detectable off-flavors developing. Butter kept in storage too long even at low temperatures loses "score".

Most people have a mistaken notion that freezing kills bacteria, yeasts and molds when as a matter of fact it simply retards their growth. Extensive studies on frozen fruits and vegetables before and after freezing show that when they were stored from 0° to 15°F. for periods of 3 to 18 months, the total number of bacteria was lessened but there were as many dif-

ferent kinds at the end of the storage period as at the beginning. This showed that no particular kind was susceptible to freezing.

It has long been known that in ice cream freezing did not kill the bacteria present but prohibited their growth as long as it was stored at a temperature that kept it solid.

From the large mass of data which has been accumulated on all kinds of frozen foods, it is evident that freezing is not a microbial killer—rather it is a deterrent—a "slower-uper"—of bacterial growth. Also that there are bacteria which grow at very low temperatures. The thing which prevents them from growing is not temperature but the physical state of the food, i.e., whether it is solid or liquid.

The Thermophilic Bacteria

At the other end of the temperature scale is another group of peculiar bacteria which in their way are even more freakish than the cryophylic bacteria. They are the thermophilic (thermo=heat phile=to love) or heat loving bacteria. One can understand how bacteria could withstand low temperatures because the organisms are in a suspended state of life or metabolism but when bacteria withstand temperatures that "cook" other forms of life, then one begins to wonder if these bacteria are operating under some special law or dispensation.

The temperature range for the thermophilic bacteria is from a minimum of 113°F. to a maximum of 158°F. The temperature which they like best is around 130°F. In order to obtain some idea of just how hot these temperatures are we shall illustrate with one or two examples:

The average person finds that water at 120°F. is too hot to work in. The white of an egg is coagulated in water at 140°F. Even among most bacteria temperatures of 113 to 158°F. are too high for them to survive. For example milk is pasteurized by heating it to 142 to 145°F. and holding it at this temperature for 30 minutes. The vegetative (growing) cells of all bacteria are killed at this temperature except the thermophilic and the thermoduric bacteria. The thermophilic bacteria instead of being killed actually grow and multiply in this heat. The thermoduric bacteria which we shall presently discuss, are not killed but they do not grow at the pasteurizing temperature.

Theories of Origin

Naturally there is going to be some speculation among the bacteriological farmers (bacteriologists) as to just how and where such a peculiar group originated. One of the most fantastic theories advanced by a noted Swedish bacterial farmer was that they came from Venus because the temperature of Venus ranges from 116 to 122°F. which would be too hot for the bacteria on earth but would be just right for the thermophiles.

Now the peculiar thing about these thermo-bacteria is that they can be isolated at almost any time of the year from any kind of soil. The question naturally arises why are they so abundant in the soil whose temperature very seldom if ever reaches the temperature of optimum growth for them.

It is certain that they are present in the soil and undoubtedly get into milk from this source. The udder has not been found to be a source of contamination for thermophiles. Once they get into milk they are very resistant to heat and to chlorine. If the utensils are not thoroughly scrubbed and cleaned daily, they collect in the dirty portions of them and persist indefinitely. The accumulation of milk stone, which consists of dried and coagulated milk together with calcium and magnesium salts, serves as an ideal protective coat for thermophiles. Unless it is removed, it serves as a focus for seeding the milk. The only way to eliminate thermophiles, whether in the milk plant or on the farm, is through scrubbing and cleaning of utensils and machinery coming in contact with the milk.

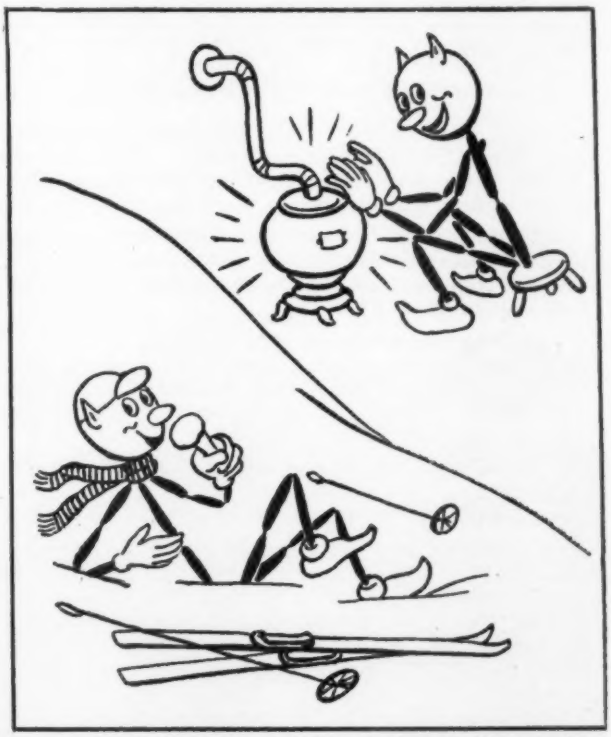
Thermoduric Bacteria

At this point one should introduce the first cousins of the thermophilic bacteria, the thermoduric (thermo=heat=durans =to endure) bacteria. The principle difference between the two is that the thermophilic bacteria grow and enjoy the high temperatures while the thermoduric bacteria merely tolerate them, that is, they are not killed but they do not grow at high temperatures as do the thermophilic group. This, as we shall see presently, makes a big difference in the way the bacterial counts of pasteurized milk should be interpreted. The thermoduric bacteria grow at ordinary temperatures, such as 50 to 75°F. and on up to body temperatures, 98.6°F. or slightly higher but not as high as 113°F., the minimum for thermophilic bacteria, but the thermoduric bacteria will tolerate pasteurizing temperatures such as 142 to 145°F. for 30 minutes or 160 to 161°F. for 15 to 16 seconds.

One of the most prolific sources of thermoduric bacteria in milk is the udder of the cow. Investigation has shown that of the micrococci isolated from the udder more than 40 per cent were thermoduric. Another important source of these bacteria in market milk is the farm utensils such as the milk pails, milking machines and cans. These utensils are undoubtedly contaminated by the milk from the udder and from other sources such as soil, feed, etc., and unless these receptacles are thoroughly scrubbed and cleaned they will add many additional thermoduric bacteria to the milk.

It has been shown that thermoduric, like thermophilic, bacteria are resistant to heat and chlorine and, therefore, extra precautions such as scrubbing must be used to rid the utensils of them.

It is clearly evident from these temperature relationships that each group of bacteria presents a different problem to the



Give a thermoduric bacteria a hot stove and ear muffs if you want to make him happy. He likes heat. His cryophilic cousin, on the other hand, thinks a nice cool iceberg is hard to beat.

dairyman. For example, we should expect to find more thermophilic bacteria in milk pasteurized at 142 to 145°F. for 30 minutes than in milk pasteurized at 160 to 161°F. for 15 to 16 seconds. Why? Because the pasteurizing temperature is within the growth range of thermophilic bacteria and the time interval is sufficiently long to allow them to grow. Furthermore, the milk may remain in the pasteurizing vat longer than the 30 minute interval. Conversely, we should expect to find more thermoduric bacteria in the short-time high temperature pasteurized milk than in milk pasteurized by the holding process. The reason is that the thermoduric bacteria can withstand the high-temperature short-time pasteurizing better than the longer time at the lower temperature.

Thus, if there is an increase in the thermophilic bacteria in the milk, we should suspect the holding type of pasteurizer and check back to find the source of trouble. If there is an increase in the thermoduric bacteria, we should suspect the farm as the source of trouble since they do not multiply during pasteurization. It is, therefore, evident that thermoduric bacteria are a problem of the producers and thermophilic bacteria a problem of the dealer.

Sanitary Significance of Thermo-Bacteria

There is no evidence to indicate that thermoduric or thermophilic bacteria cause disease. Their sanitary significance lies in the fact that excessive thermophilic or thermoduric counts in the milk indicate carelessness. It may be that the farmer is negligent in cleaning the milk pails, the cans or milking machines. He may not cool the milk properly or to a low enough temperature. He may be careless in his milking methods such as wiping the udder. The dairy plant operator may not properly clean the pasteurizing equipment or disassemble and clean the sanitary piping daily. These and many other unsanitary and poor practices may be the cause of excessive number of thermo-bacteria. This type of carelessness is poor sanitation and should not be condoned. The presence of these heat resistant bacteria is just another of the many indices of proper sanitation which the milk sanitarian may use to check the care used in handling the milk.

Control Measures for Thermo-Bacteria

From what has already been said, some of the means of controlling the thermo-bacteria are evident and have been indicated. Other methods of control have not been mentioned so far. A detailed list follows:

1. Scrub and thoroughly clean all farm utensils and dairy plant equipment to free them of milk film and milk stone. Free the cracks and crevices of milk nutrients in which bacteria may grow.

2. Carefully select the type of detergent suitable for cleaning the type of equipment being used. Research has developed new types of cleaners that are more efficient and economical than the old types formerly used. A good detergent will save labor and will do a better job at less cost.

3. Promptly cool the milk to 50°F. or below. Thermophilic bacteria do not grow below 113°F. and thermoduric bacteria are greatly retarded at low temperatures.

4. Milk foam may be a prolific source of thermo-bacteria. Equipment in which foam forms is frequently filled and emtied of milk several times without removing the foam in which case the foam may seed each batch of milk passing through. Air-space heaters and air temperature-recording thermometers should be used to make sure that the bacteria in the foam are destroyed.

5. Pellicle formation on the surface of hot milk in a vat should be avoided, since the pellicle affords protection for the heat resistant and tolerant bacteria.

Symposium on Trends

Next month the *Review* will devote the major portion of its editorial pages to an exhaustive symposium of trends in the fluid milk industry.

WE will bring to you the opinions on the immediate and long range future of the industry as expressed by outstanding dairymen, economists, and government officials from all parts of the country.

WE will present an article on the cow population compiled from reports sent to us especially for this symposium.

WE will publish an analysis of United States Department of Agriculture's report on dairy product's market in 1947.

WE will give you reports on developments in particular geographical sections of the country.

WE will attempt to present information that will be of assistance to you in determining where you are going and how you are going to get there.

Watch for the May issue of this magazine.

6. Avoid repasteurizing pasteurized milk. This builds up thermophilic bacteria since they get two chances to grow instead of one.

7. Shut down and clean the pasteurizer every 2 or 3 hours. Long continued runs afford thermophilic bacteria an excellent opportunity to grow.

8. Check the pasteurizing equipment for leaky regenerators, dead-ends, condensates draining into the system, poorly draining vats, foam and pellicle formation. All can be a potent source of thermo-bacteria.

Ordinary Bacteria

So far we have been discussing bacteria at either end of the temperature range. Now we should take up the ordinary bacteria that are the common people and backbone of the bacterial world. Here we find, as in human society, all classes. There are the criminals the streptococci, causing all sorts of diseases such as septic sore throat, scarlet fever and nasty infections all over the body, in the ears, heart valves, or anywhere they can get a foothold. Then there are their cousins, staphylococci, which cause food poisoning in cream puffs, pastry, creamed foods and the like as well as boils and many infections. The Samonella group which cause many cases of food poisoning and Brucella trio causing undulant fever in man and abortion in animals. One should also mention diphtheria, typhoid fever, botulism and many many others but space will not permit.

Then there are the good, hard working, peaceful citizens of the bacterial world about whom you do not hear very much. The myriad bacteria present in the soil which decompose the countless tons of organic matter making it available for plant food, the nitrifying bacteria which fix atmospheric nitrogen and make it available for plant food. The organisms that decompose all dead animals and plants. In fact this world would be one immense garbage heap if it were not for these common bacteria. The primary purpose of bacteria in the world's scheme is destruction. They decompose every conceivable thing quickly and as soon as possible. Some times they do not even wait until plants and animals die but attack them while they are living. Such bacteria we call pathogenic bacteria.

Nature has wisely provided bacteria that will thrive in the extreme cold, in very warm and at normal temperatures. No matter under what conditions bacteria are found, one thing is certain, they are destructive for that is their primary purpose in the World's design.

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EDITORIALLY SPEAKING . .

Foot and Mouth Disease

THE CURRENT "cloud no bigger than a man's hand" on the dairy horizon is the foot and mouth disease in Mexico. In spite of stainless steel and white tile, Madame Bossy is still at the bottom of the dairy industry. Any threat to her is a threat to the industry. "You are talking, gentlemen, about the lady I love."

In September 1947 the *American Milk Review* published an article entitled, Aftosa — Mexican Tragedy. At that time the line of attack on the disease was one of slaughter, burial, and disinfection. The article discussed the tremendous difficulties of the operation, difficulties of terrain, communications, and ignorance. Yet, obstacles not withstanding the program was going forward. The disease was being pushed back. It was something of a jolt, therefore, that we learned of the decision to discontinue the slaughter program and substitute a quarantine-vaccination program in its stead. The new system is now in effect.

Among cattlemen there is more than a little concern. Many husbandmen looked upon the decision to abandon the slaughter program as a kind of retreat, an admission of failure. In truth such an opinion was held by your editor for a time. But the campaign was not a failure. The change in procedure was not a retreat. The present program represents not so much a retreat as it does a revision of tactics in the light of experience. The slaughter campaign was a terrific shock to Mexican economy. Armed rebellion was increasing as the tempo of the slaughter increased. The operation had a good chance of being a success but the patient was in grave danger of dying.

Secretary Anderson declared in a speech before the New Mexico Cattle Growers' Association on March 8, 1948 "Last summer and fall officials of the Mexican Government were aware of a mounting tension as the slaughter program reached as many as 28,000 cattle and 30,000 small animals in one week. This was a tremendous economic shock to Mexico, and at this point, as you already know, the Mexican Government presented a request for a program change."

The new quarantine-vaccination program has the approval of some of the most outstanding livestock men in the United States. The position of the Department of Agriculture is, "We recognize that the presence of the foot-and-mouth disease in Mexico is a dangerous threat to the American livestock industry. The job is to control the disease—prevent its spread and finally to eradicate it. We will not abandon that job." The tactics have been changed but the objective remains the same.

It is our belief that the tragedy in Mexico will be kept within bounds and eventually eradicated. It is a serious threat to the dairy industry and a situation that dairymen must watch closely. But from what we read and hear the greatest assistance that the industry can give the Department of Agriculture in the fight for eradication is a thoughtful appreciation of the job to be done. You see, this disease story is a natural for the sensationalists. There are, unfortunately, journalists who thrive on scaring people. The bigger the scare the bigger the story and the bigger the check. Witness the immense amount of poppycock that heralded the advent of the atom bomb. The damage that such irresponsible talk does is two-fold. It encourages false thinking on important questions and it hampers the efforts of those charged with accomplishing the very thing that the sensationalists demand be done.

One does not have to support the Department of Agriculture and all its works with a blind faith. But the dairy industry, on its own initiative, cannot clean up the foot-and-mouth disease in Mexico. That is a governmental function. If we must trust somebody it seems to us that we would a "dern sight" rather trust the Secretary of Agriculture and his staff than we would the prophets of doom who can destroy a great deal better than they can build.

•

We Progress To Live

ONE OF THE MOST satisfying features of the dairy industry is the constant search for more knowledge that it encourages. Day in and day out research men in our land grant colleges are carrying on investigations that have practical applications in the field. In Washington and at Beltsville, Maryland one of the finest dairy research operations in the world is at work probing the innumerable corners of dairy manufacturing. Many of our larger dairy firms support research laboratories manned by competent scientists. Finally the trade associations carry on research work on their own hook and disseminate new thoughts, new ideas throughout the industry.

It is an axiom among philosophers and historians that nothing is static. No organization or society can maintain the status quo, can keep things as they are, Society is so constituted that it must either go forward or go backward. It must either progress or retrogress.

History and nature are full of examples of creations that have ceased to grow. In every case the organism or organization experienced a gradual decline until it disappeared from the face of the earth or was swallowed up by the expanding vigor of a dynamic new comer. Rome, in the hey-day of its power, was a symbol of this law of existence. The static character of Medieval institutions made them a poor match for the exuberant pursuit of knowledge that marked the Rennaissance. And in our own era we have seen great nations brought to quick and cataclysmic destruction when the right to think and speak was removed from the public realm.

One cannot see the programs of the numerous dairy products conventions that are being held these days without realizing the dynamic nature of our industry. A multitude of subjects ranging from insect control through Federal regulation appear on the dockets. No subject is too insignificant; no idea too far fetched to merit examination. This is a healthy situation. So long as it continues so long will the dairy industry move forward.

XUM

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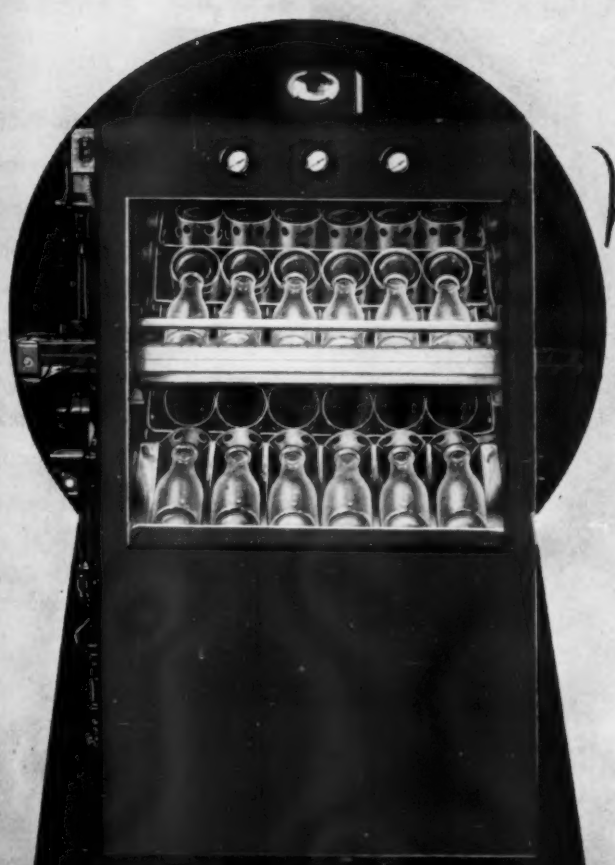

These new models have many features which are unique and are sure to appeal to the experienced plant operator. They are faster, more economical to operate, more accessible and fool-proof.

If you are planning new bottle washing equipment, it will pay you to learn about the New GIRTON Soaker Washers. Now available in capacities from 16 to 72 bottles per minute.

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Lots of smart Dairy Operators

see DACRO P-38

The operating advantages of Dacro P-38 are
matter of simple arithmetic. That's why so many
dairy operators are including this new and
cap in their plans for modernizing or expanding
plants.

First, the Dacro P-38 Cap costs less because it
smaller in size. *Second,* operating costs are
because of the fast, trouble-free performance of
improved Dacro Capping System.

Here are two basic factors that affect bottling

CROWN CORK & SEAL COMPA

Reduce your Bottling

The Smaller Size *SAVES YOU MONEY....*

Approximately 24 caps for 48 mm. bottles can be made from a square foot of material . . . even less on some types of caps.

41 Dacro caps for 38 mm. bottles are cut from a square foot of material.

Dacro P-38

gives you at least 17 MORE CAPS from each square foot of material!

ors

38

n their future...

38 are acro P-38 reduces both to a minimum. This is a fact many ale ch has been definitely proved by actual opera- nd smalle in a number of large dairies over a period of nding the re than two years. If you are looking for an swer to the question, "Where can we cut costs?"— ecause it is the time to investigate the Dacro P-38. A ts are le cro Representative will gladly give you all the ance of th ts . . . show you what Dacro P-38 is doing for se who are already using this modern milk bottle ottling cos ping system.

COMPA *cro Division* • **BALTIMORE 3, MD.**

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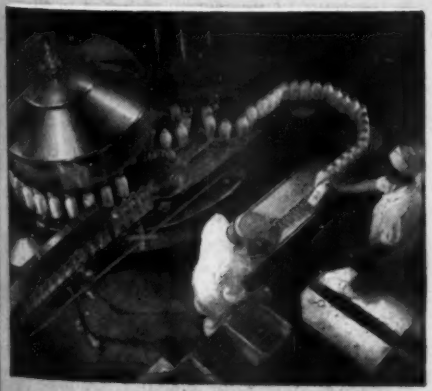
Trouble-free Operation SAVES YOU MONEY....



The simplicity of the Dacro Capping System not only permits caps to be applied at high speeds . . . its performance is dependable, with few interruptions to the steady flow of production. Dacro P-38 is a one-piece cap, complete in itself. It is applied in a single capping operation by a capping mechanism that fits right on the filler. No plug caps, no additional machines, no extra operators are needed. This simplified capping gives you high production speeds and continuous, trouble-free operation . . . a combination of features that saves you time and money.

THE FROZEN STORAGE OF MILK

As a Method of Preservation, Freezing Is an Ancient Practice Improved by Modern Methods — Experience of the Armed Forces Shows Feasability of the Process

By **F. J. DOAN**

Professor of Dairy Manufacturing, Pennsylvania State College

THE NATURAL FATE of all organic material is to suffer decomposition, variously referred to as decay, fermentation, rotting, or putrefaction, brought about by the action of microscopic plants known as bacteria, molds and yeasts. This decomposition is a tearing down process which takes apart the complicated chemical compounds which have been put together by the functioning of plants, aided by the sun's energy, and built up by the life processes of animals. The end result is that the organic substances are reduced to the simple inorganic compounds from which they originally came and in this form they can be again used by plants in nature's biologic cycle. This illustrates the conservation of matter. Matter in this cycle is not consumed or lost but used over and over again as a means of capturing the energy from the sun and releasing it for the support of plant and animal life.

All food substances are organic materials and as such are subject to the attack of microorganisms in nature's scheme. Bacteria are sometimes looked upon as an unnecessary and troublesome evil especially by those in the food industry. Actually they are a very essential part of the biologic cycle for without them the earth would either become one huge mass of vegetable and animal refuse or life as we know it would be impossible.

The decomposition of organic materials can be delayed by making conditions unfavorable for the action of microorganisms. Wood is painted and treated with creosote; hides are dried and tanned; fibers are cleaned, dried and treated with preservatives; and, through all of recorded history and probably long before, man has sought ways of keeping stores of foodstuffs, accumulated in seasons of plenty, so that they might be drawn upon for subsistence in times of scarcity, drought or famine. Many methods for this purpose have been evolved, the beginnings of some lost in antiquity. Only with the advent of the science of bacteriology have these methods become understood and their application been made more exact and predictable. It is interesting to note that with all the fancied scientific advances of the twentieth century no absolutely new methods of preserving foods have been discovered or developed. All modern systems of preservation are merely more exact and more thorough applications of methods known and used for centuries.

Presented at the 16th Annual Convention of the Pennsylvania Association of Milk Dealers, Harrisburg, Pa., February 18, 1948.

Drying Is an Ancient Art

Foods can be preserved by drying. Bacteria need water just as imperatively as do other living things. If substantially all the moisture is removed from a food product, microorganisms cannot function and decomposition is postponed. Sun drying and drying over fire were probably some of the first ways of preserving food discovered by our prehistoric ancestors. It is reported that Marco Polo observed the sun drying of milk in China in the thirteenth century.

F. J. DOAN

Souring, salting, sugaring, pickling, smoking, etc., often enhanced by drying or partial drying are methods of food preservation which have been employed for centuries. In these cases bacterial action is discouraged by making the moisture remaining in the food product so concentrated in soluble substances that the bacterium itself suffers dehydration of the cell by an osmotic effect or the acidity of the moisture is raised to the point where very little bacterial activity is possible. Sweetened condensed milk, concentrated sour skimmilk, buttermilk, etc., are preserved in this manner.

Cooking or the use of lethal temperatures for preserving foods, or delaying food spoilage has long been known and is the basis on which the present-day canning industry operates. High temperature cooking does not make the bacterial environment unfavorable but actually destroys the microorganisms in a sealed container through the action of the heat. Pasteurization of milk is not a preserving treatment but it does prolong the keeping period because a high proportion of the bacterial present are eliminated. Sterilization, as in the case of evaporated milk or canned cream, however, is a preserving treatment and such products will keep indefinitely until the container is opened.

Prehistoric Man Used Freezing

Freezing and frozen storage are likely to be looked upon as new and distinctly modern methods of preserving foods. The mechanical facilities for applying the method, it is true, are new and still in the process of development but it is almost certain that prehistoric man in the colder climates knew and made use of freezing as a means of preserving meat that could not be immediately consumed. Little commercial use was made of freezing as a preserving method until mechanical refrigeration was developed and at first only for the bulk storage of such products as meat, fish and fats and in the dairy industry ice cream, butter and later cream. Ice cream was in fact the first commercial food which was preserved all the way to the consumer in the frozen state and this was common even before modern freezers and refrigerated cabinets were available, by making use of freezing mixtures of ice and salt.

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BRADWAY chocolate flavored SYRUP

On every count . . . genuine chocolate flavor, eye appeal, ease and economy of mixing . . . BRADWAY Chocolate Flavored Syrup has what it takes to satisfy your customers and pyramid your profits. It's rich and flavorful . . . *non-settling and non-separating* . . . and always uniform in color. Remember the name—BRADWAY! The best sales-building brand on the market! Introduce it to your customers by taking advantage of the trial offer below.

For Your Retail Outlets

For dairy and ice cream bars or other retail outlets, stock BRADWAY Chocolate Flavored Syrup. Delicious on ice cream and other desserts . . . a fast-moving money maker for you!

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BRADWAY CHOCOLATE CO., New Castle, Indiana

Please ship following order on money back guarantee:

.....gals. Bradway Non-Settling Chocolate Syrup @ $1.50 per gallon. (Packed 6 No. 10 tins to case or in 5 gallon pails.)

.....cases Bradway Chocolate Syrup @ $5.05 per case of 24—12 oz. jars.

Ship Express ☐ Freight ☐

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NAME_____

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CITY_____ STATE_____

Most people, perhaps, do not consider the freezing of ice cream so much a form of preservation as a means of converting the food into a palatable and delectable condition for eating. Nevertheless, the freezing does indeed preserve the product, sometimes for long periods, before it is finally consumed.

In the last decade or so the application of freezing and frozen storage has been extended to almost all forms of food and, with the development of frozen food dispensers, lockers and home units, to the retail as well as the wholesale levels. Almost anything obtainable in cans is now to be had in frozen form in packages and some things not available in cans.

Freezing lowers the temperature of the food to a point where few bacteria are able to survive for long, to say nothing of multiplying or causing fermentation. The low temperature does not immediately kill the organisms but studies have shown that it does so gradually. Foods are always lower in bacterial count after frozen storage than when first frozen. The freezing also acts somewhat in the same manner as adding sugar or salt. That is, the available water is decreased by the formation of ice and the soluble materials are highly concentrated in the remaining small quantity of liquid moisture.

The dairy industry has for many years frozen excess cream in the flush season, stored it in the frozen condition, and used it in the period of low milk production with economic advantage and no appreciable sacrifice of the quality of the product in which it has been used, principally ice cream.

Studies at the Nebraska, Ohio State and Pennsylvania stations and limited commercial experience have shown that skimmilk can be concentrated and stored in the frozen condition in a manner similar to cream. This provides another method of preserving solids–not–fat for which only two other methods have been generally used, namely, storing as sweetened condensed skimmilk or as dry skimmilk. Both of the latter products have limitations for certain uses, the one contains large quantities of sugar the other usually exhibits a changed flavor. Frozen concentrated skimmilk contains only the natural plasma ingredients in their normal relationships and the flavor is not greatly altered by the method of preservation.

Frozen Concentrated Skimmilk

Fresh, good quality, fluid skimmilk is forewarmed or preheated to 170°F. for 15 minutes and condensed to a Baume reading of about 16 degrees at 120°F. It is then cooled to 40°F. or under, filled into tinned containers or special fiber containers, frozen as rapidly as convenient and stored at a temperature as low as possible, in no case higher than -10°F. As a rule the product can be stored for at least 10 weeks and frequently as much as 16 weeks before it must be used.

Skimmed milk rarely becomes oxidized and concentrated skimmilk almost never. Due to the rather high forewarming temperature the product will have a cooked flavor when frozen but this gradually decreases during storage. The most troublesome problem with frozen concentrated skimmilk is the tendency for the protein to lose its stability and become flaky or curdy when the product is defrosted or thawed. This is a gradual occurrence and is the factor which determines the length of possible storage. The influences known to accelerate the loss of stability on the part of the protein are:

1. forewarming (pasteurizing heat treatments in excess of 170° F. for 15 minutes);
2. high degree of concentration of the milk;
3. high storage temperatures (over —10° F. are unsatisfactory); and
4. bacterial action in the fluid before processing.

The curdiness becomes evident gradually during frozen storage but is not visible until the milk is defrosted. Conveniently, however, this flaky condition can be reversed by heating. Thus sometimes the product looks extremely bad when melted yet when used in an ice cream mix and pasteurized and homogenized the flake or curd becomes redispersed and the mix is entirely normal in appearance and properties. On prolonged frozen storage a point is finally reached where the curdiness no longer responds to heating and homogenization. The stored product should be used before this point is reached.

It is best to keep different batches of frozen concentrated milk separated in storage and marked with some identifying symbol so that they may be used in the same sequence as they are put into storage. It is also a good plan to fill several small pint or quart containers of each batch and store these along with the batch. These "pilot" containers can be defrosted and examined periodically after 10 or 12 weeks of storage to note the progress of protein denaturation and to give warning that the particular batch should be used before the condition becomes troublesome. When the milk in these pilot containers exhibits a flakiness on thawing which will not disappear on heating to 150°F., the product should be used at once.

While solids–not–fat may be stored as frozen concentrated skimmilk, it may be economical to consider the frozen storage of concentrated whole milk in those cases where fat is also to be stored. By doing this it will not be necessary to separate the milk and handle the cream or butter separately.

Frozen Fluid Whole Milk

During the recent war the Army desired some form of milk which could be served to casualties and convalescents in base hospitals abroad and on hospital ships evacuating the wounded and sick from the fighting zones. For morale purposes fresh fluid milk would have been most acceptable. Due to the distances and time involved, refrigerated fluid milk was out of the question. Evaporated milk and reconstituted dry milk were unacceptable because of flavor abnormalities and because of the lack of facilities for reconstituting them in a sanitary manner. Frozen milk was tried, first in the concentrated form, but here again the facilities for defrosting and reconstituting were thought to be too great a sanitary hazard. Finally frozen fluid milk was put to the test and surprisingly satisfactory results were obtained. At the end of the war the Army had contracts with several east coast and west coast dairy companies for the supplying of frozen fluid milk. Had the war lasted another year it is likely that all hospitals and convalescent centers located in areas lacking suitable fluid milk would have been furnished a continuous supply of frozen fluid milk from the States.

The milk contracted for by the Army and later by the Navy and War Shipping Administration was carefully pasteurized and homogenized, cooled and filled into paper containers. It was frozen statically, for the most part in ice cream hardening rooms, and then held at subzero temperature until used. In dispensing the frozen milk, it was thawed slowly at room temperature without opening the container. When properly handled, defrosted and mixed, few of the users could distinguish it from fresh fluid milk, even though in some cases it was three to four months old when consumed.

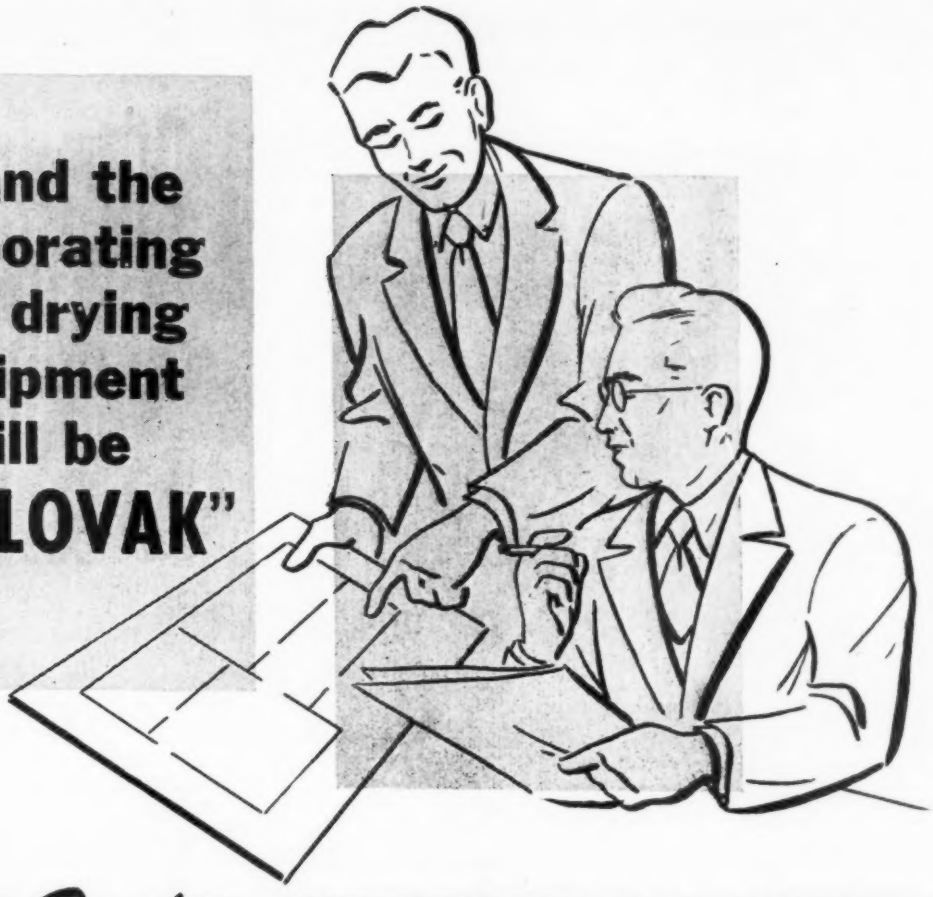
Held for Six Months

Studies made by the Army and by experiment stations in Pennsylvania and Illinois all confirm the opinion that fluid milk can be frozen and held in very acceptable condition for periods up to at least six months. The most important factor is the storage temperature. This must be at least 10°F. below zero and lower temperatures are advantageous. Too high a storage temperature results in a flocculation of the protein in a relatively short period of time.

Another problem with frozen fluid milk is oxidized flavor but this has been controllable through the elimination of copper in equipment and by using higher heat treatments in pasteurizing. Homogenization itself, is also an antioxidative influence.

The flavor of defrosted frozen fluid milk is likely to be somewhat flat although for a considerable period of time in frozen storage a cooked flavor is evident which is very similar to but stronger than the flavor of fresh fluid

"...and the evaporating and drying equipment will be BUFLOVAK"



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ASSURANCE OF *Quality* CONCENTRATED MILK PRODUCTS

There's a world of wisdom and foresight in including Buflovak in your plans for increased profits. For when you install a Buflovak Double Effect Evaporator you are assured of maximum product quality at lowest possible production cost. Yes, with Buflovak you produce condensed and evaporated milks with that rich natural flavor . . . that inviting color and uniform texture . . . sales stimulating products that enjoy a ready market. And Buflovak's famed operating economies . . . 99.9% solids recovery, 50% saving in steam and cooling water, simplified sanitation . . . guarantee greatest return for dollar invested. When you plan — plan for profits . . . specify Buflovak.

Buflovak double effect EVAPORATOR

Companion product of the Double-Effect Evaporator, and equally as efficient and economical is the BUFLOVAK ROLLER DRYER for drying whole milk, skim milk and buttermilk.

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homogenized milk. Even though the flavor becomes flat the milk is much more acceptable than average reconstituted dry milk as was immediately evident in actual trials by the Army.

The factor which will undoubtedly operate to restrict the development of frozen fluid milk, commercially, is the cost. Actual cost figures on such an operation are not available. Any cost data the army may have would not be applicable to civilian outlets and the cost data contracting dealers may have on their operations for the Army do not cover distribution and merchandizing. It is self-evident that freezing and frozen storage are expensive operations and it is highly unlikely that frozen fluid milk could be merchandized in competition with the usual bottled product even though procured in areas of production where the prices to the producer are considerably lower than those existing in the fluid milk sheds of the larger markets. It appears, therefore, that frozen fluid milk will not become a common commercial product in the foreseeable future and will only be used where the urgency for a natural form of milk, not otherwise available, overbalances the cost.

Frozen Concentrated Whole Milk

Experimental work on frozen concentrated whole milk goes back to about 1932 and several studies have been reported in the intervening years. Most of these have come from the Bureau of Dairy Industry and the Pennsylvania Experiment Station. Interest has been largely confined to the freezing and storage of concentrated milk because fluid milk was deemed too bulky a product to be economically handled. By removing a considerable portion of the water, the costs of freezing are greatly reduced as are also the costs of refrigerated storage and of handling. In most of the studies the preservation of milk in bulk for future use in ice cream or manufactured products was of primary concern. In 1944, however, the Pennsylvania workers found that it was possible, at least technologically, to concentrate milk, homogenize, freeze, package and harden it using ordinary ice cream making equipment, for the purpose of dispensing it as a frozen food in retail containers. The ice cream freezer is not an essential part of the process. The product may be packaged in the fluid state and frozen in suitable low temperature rooms or freezing tunnels. Pre-freezing in an ice cream freezer, however, makes it possible to employ equipment already available for the handling and packaging process. Moreover, the air incorporated in the initial freezing (which should be kept at a minimum) allows the frozen product to be more conveniently and more quickly defrosted, and reconstitued.

As has been mentioned in connection with frozen concentrated skimmilk and frozen fluid whole milk, the most troublesome feature of any attempt to manufacture and sell concentrated whole milk as a frozen food will undoubtedly be the tendency of the protein of the milk to undergo a loss of stability as the storage or holding period is prolonged.

Unlike the situation with bulk frozen concentrated skimmilk, this product in the consumers hands, will not be subjected to pasteurization and homogenization, and any flakiness evident on defrosting and reconstitution will meet with strong criticism. Consequently, all the factors previously mentioned as affecting the rate of protein denaturation will have to be very carefully controlled and even then the possible storage period will be definitely shorter. In particular, it will be necessary to assure satisfactory low temperatures, not only in the dealers cabinets, but also in the home freezers. In addition, it will probably be necessary to date the packages with the limit of time for safe holding. If proper precautions are taken it seems possible to produce and market frozen concentrated whole milk with a storage life up to 8 or 10 weeks.

Oxidized flavor, being less troublesome in concentrated than in fluid milk, can be controlled in the frozen product without much difficulty by using the suggested heat treatment of 170°F. for 15 minutes which sets up anti-oxidative conditions in the milk persisting at least as long as the milk can be stored before the protein dispersion is affected.

Commercial Value Not Certain

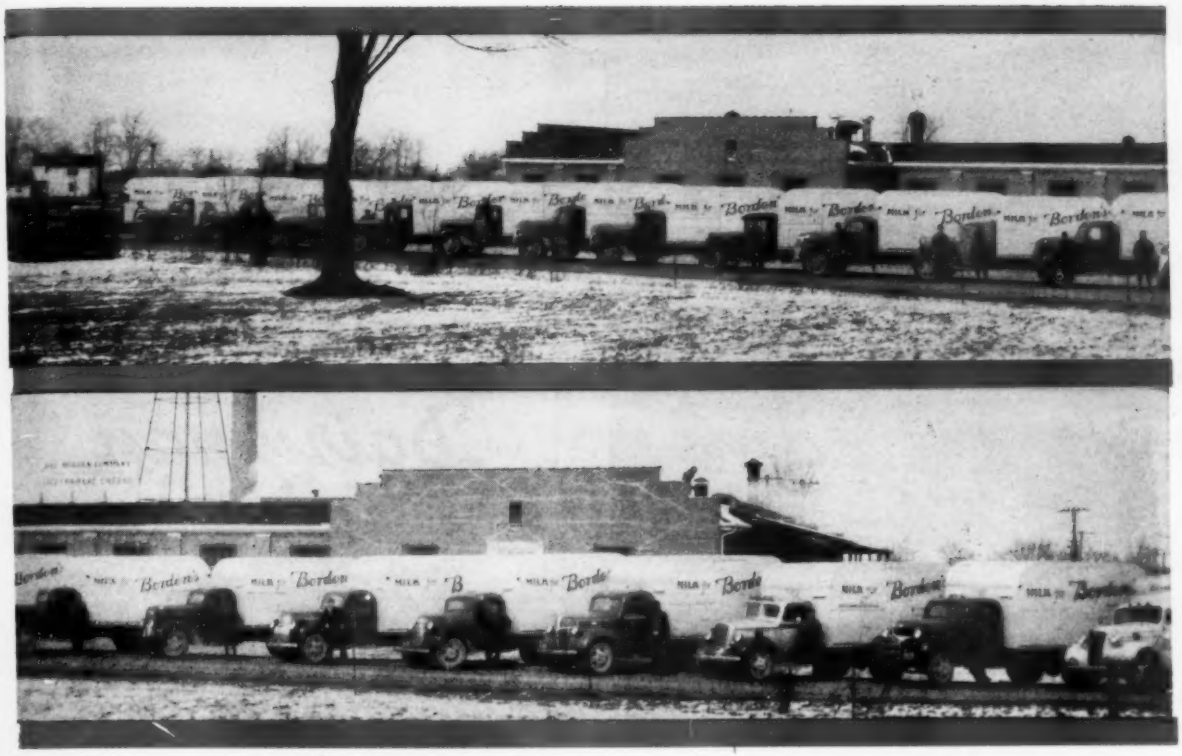
It is by no means certain that frozen concentrated milk will become a common article procurable at the corner grocery, as is the case with canned milk and many frozen foods. However, such new outlets for the product of the cow, certainly are not impossible and not even improbable. Shipments of frozen concentrated milk have been made from the West Coast to Alaska in an effort to provide an acceptable substitute for fresh fluid milk which is in very short supply in the territory. The Army, too, has found it possible to furnish a satisfactory substitute for fluid milk, and a relief from evaporated and dry milk, to bases in the Canal Zone through shipments of frozen concentrated milk from the States. Recently, it was announced that a research project on the freezing and frozen storage of milk had been approved for the Bureau of Dairy Industry under the Research and Marketing Act of 1946 primarily to investigate ways of retaining the "freshness" of the product. These incidents are "straws in the wind."

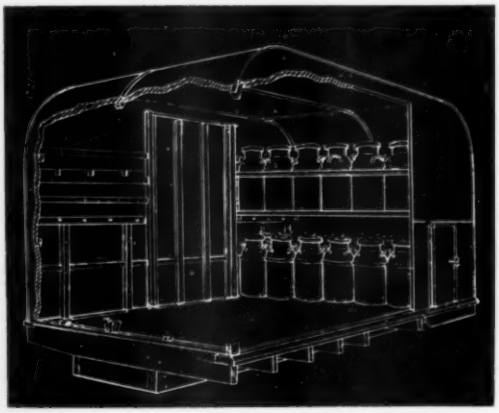
If and when frozen concentrated milk

Dairy Daze

By Edgar Allen, Jr.

"COME ON! COME ON! WHO CARES HOW THEY DELIVERED MILK IN ITALY!"





One large door and two small doors on each side provide access to all floor space

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2 Weeks' Delivery

More Milk Haulers Are Changing Over to Millington Milk Truck Bodies for Farm Pick-up

In the first place Millington insulated Milk Truck Bodies mean a lower investment in transportation equipment because of their lower price. Second, they mean lower operating costs all along the line because of their lighter weight which results in reduced tire wear and gasoline bills and general maintenance cost. And last, but not least, they mean an appreciable saving in time and labor because, with three doors on each side, all cans are loaded from the ground, and it is not necessary to enter the body except to load the upper deck.

Durably built of top grade hardwood with Tempered Masonite or Aluminum Covering. Completely insulated. A Model 66 has a capacity of 114 cans, which is an ideal load for a 1½ ton long wheel-base truck. Painting and lettering done to your specifications.

WRITE for prices and capacities of bodies for trucks of any specified wheel base.

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DAVID L. BUTTRICK

Portrait of a Dairyman

WHEN DAVID L. BUTTRICK was born the roar of fratricidal cannon along the Rappahannock and the Cumberland had hardly ceased. When he celebrated his eightieth birthday last February the terrible wounds of World War II had scarcely begun to heal. During fifty-seven years of participation in the dairy business Mr. Buttrick has seen five depressions and three wars. He has seen the great revolutions created by the automobile, the telephone, the airplane, and the radio. He has seen the Gold Rush of '98 and the fall of empires that were born a thousand years ago. Against this background of strife and upheaval Mr. Buttrick built an enterprise that has endured.

In 1891 a horse drawn wagon bearing the name of Buttrick brought butter, eggs, and poultry to the residents of Arlington, Massachusetts. The wagon evolved into a single store and the single store into a chain of seven. Eighteen years after his start Mr. Buttrick disposed of the stores and concentrated on the cream and butter business. He built a new plant in 1920 and by 1925 he had seven country plants in Vermont feeding raw material into the Arlington headquarters. In the late "thirties" he acquired the F. H. Reed Dairy in historic Lexington and added a retail business to his expanding operation. He established an ice cream business in 1939 and topped it off by building one of the finest ice cream stores in New England.

There are more than a hundred employees in the Buttrick organization at the present time. The seven country plants have been consolidated into two modern establishments handling milk of some three hundred producers; some of them are men whose grandfathers started shipping to Buttrick's in 1891. The retail business alone maintains thirty-five trucks to distribute its products. Yet, impressive as these figures are, they are not the story. The story is one of energy and progress, of Yankee ingenuity and enterprise. It is the story of a man who understood the inexorable law that reward is in direct proportion to industry. It is a story of integrity and a word that was as good as a bond.

Mr. Buttrick has done a great deal more than build a splendid business. What he has really done is to demonstrate anew the constant nature of the ancient virtues. There is no substitute for industry. There is no alternate for integrity.

Newly elected president of the Dairy Industries Supply Ass'n—Ray E. Olson of the Taylor Instrument Companies, Rochester, New York.

DISA ELECTS

OLSON and JORDAN TAKE OVER

Retiring president of DISA after serving two terms—Robert Rosenbaum of the David Michael Co., Philadelphia, Pa.

The 29th annual meeting of the Dairy Industries Supply Association held at the Palmer House in Chicago on March 24th, drew a record breaking attendance of dairy industry leaders.

Elections

Ray E. Olson of the Taylor Instrument Companies, Rochester, N. Y., was elected president, succeeding Robert Rosenbaum of the David Michael Company of Philadelphia. Wayne Jordan of the Liquid Carbonic Corporation, Chicago was elected vice-president, while Ralph Young of the Sharples Corporation, Philadelphia was re-elected treasurer.

Re-elections for a three-year term to the Board of Directors were as follows: Directors at Large, George F. Kroha, the Pfaudler Co., R. E. Olson and Roland F. Smith; Commodity Directors, R. D. Britton, Wisner Manufacturing Corp. (representing jobbers), Robert Rosenbaum (representing ingredients), G. W. Willits, Johnson and Johnson (representing members identified with general commodities and services).

The meeting was devoted largely to a study of the broadening aspects of the dairy enterprise throughout the world due to an increased interest in milk production and the importation of dairy products in foreign areas, particularly in the less-developed countries. A serious note was struck concerning the severe shrinkage of the domestic production of milk.

Comprehensive DISA Activities Story Told

DISA's own story of accomplishment as a unique organization of the suppliers and equippers of a major industry highlighted the program. The development and maintainence of services of substantial value to its membership and in enlarging and buttressing the vital industry using the products of the members, was strongly outlined. Twenty or more DISA personalities brought out the successive chapters of this story.

George F. Gallagher, Krim-Ko Corporation, and Earle L. Slayton, Cherry Burrell Corp., co-chairmen of a special committee, presented a report resulting in the establishment of

A section of the 200 and more executives of DISA member companies attending luncheon in Chicago in connection with the 29th Annual Meeting on Mar. 24.

a DISA Committee on Customer Association Relations. The purpose of this committee is to study the activities of the various organizations and groups through consultation with their officers particularly in the field of expected financial participation by DISA members, and to advise DISA members of their findings and recommendations. President Olson expects promptly to name committee.

The address by Dr. R. E. Hodgson, assistant chief of the Bureau of Dairy Industry, United States Department of Agriculture carried a prediction of increasing and urgent markets for milk products both at home and abroad. The tropical and sub-tropical belts, he said, are potential markets for American dairy products.

Wentworth Cites a Critical Situation

W. A. Wentworth of the Borden Co., and Vice-Chairman of the Dairy Industry Committee gave a very enlightening talk that was well received. He told the DISA gathering that a sharp drop in domestic milk production, combined with an expanding domestic population due to an increase in marriages and births in the past few years, is causing a serious crisis in the dairy field.

Farmers are getting relatively higher prices for beef than for dairy products and as a result are more inclined to sell their milk cows on the hoof. Current high prices for feed is discouraging the farmer from holding on to his cows. Mr. Wentworth predicts that with the stepping up of exportation of milk products under the European Recovery Program the problem will reach its peak this fall unless corrective steps are taken. He recommends that dairy farmers be educated to hold on to their cows. The prospects for an improvement in the grain situation is encouraging, he continued, and milk is always an income producer even during depression times. The Dairy Industry Committee, continued Mr. Wentworth, is undertaking an educational program of this nature.

Al Wentworth, vice-president of the Borden Co., and vice-president of the Dairy Industry Committee, as he addressed the Dairy Industries Supply Association at its 29th Annual Meeting in Chicago.

The inimitable wit of retiring president Rosenbaum was a refreshing diversion from the serious speeches of the day. Mr. Rosenbaum projects a winsome personality across the dais and has the ability to handle with ease and aplomb the numerous and unexpected questions asked from the floor.

Tension mounted high as the lottery for assignment of floor space for the 1948 Exposition got under way. Space locations, it is said, applies to 30% more area than the 1946 show. Described officially at the meeting as the world's largest single industry exposition the Dairy Industry Show at Atlantic City this year will outstrip every preceding show in size, variety of exhibits and attendance.

●

R. H. Strickland of the Solar Sturges Co., Melrose Park, Ill., and John C. Taber of the Urner-Barry Company, New York City, two of the 225 members who registered at the DISA meeting. Mrs. Gail McDonald, Administrative Assistant of DISA was in charge of registrations, assisted by Betty Gay Wise of the Waukesha Foundry Co., Waukesha, Wisc., who volunteered to help.

The "Lottery" for booth assignments at the coming Dairy Industries Exposition in October climaxed DISA'a Annual Meeting, March 24 in Chicago. Volunteers from the audience of company representatives—Ray Martin of Nash-Kelvinator, Detroit, Michigan, and Robert Strachan of the Pfaudler Co., Rochester, New York — are shown drawing company names and booth numbers from "fish bowls". DISA staff members in the center are recording the results of the lottery, which is being M C'ed by Roberts Everett, DISA's Executive Vice-President.

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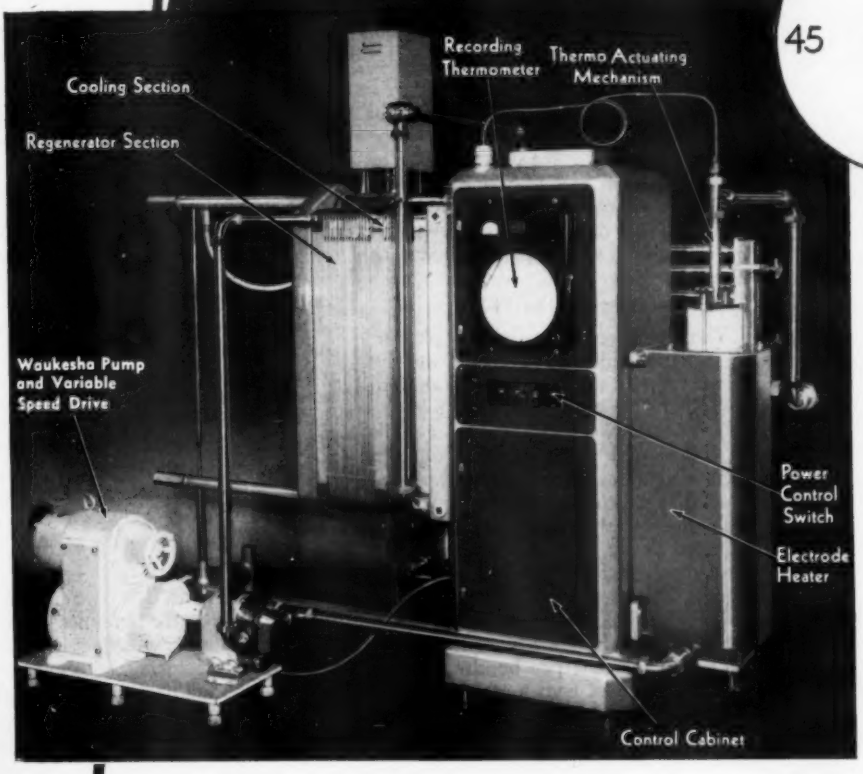

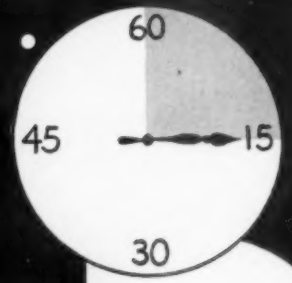

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Name_____

Address_____

The LOUISVILLE PLAN

KENTUCKY, FAMOUS FOR ITS horses and its Colonels, has added to its already considerable stature by the introduction of the famous Louisville Plan. The purpose of the plan is to bring about some reduction in the wide fluctuation between spring and fall milk production. It was introduced into the Louisville market by the Fall Cities Milk Producers Association and is now a part of the Federal order regulating that market. It is a plan that has been carefully watched by the dairy industry and has served as the model for similar plans evolved in other markets. Connecticut's Level Production Incentive Plan is one of the most recent descendants of the Louisville Plan.

Take Off and Pay Back

This plan, which is officially known as the Louisville Fall-Premium Plan for Seasonal Milk Pricing, is described in the trade as the "Take-off and Pay-back Plan". What it does is to provide a guaranteed premium for fall milk. A deduction of a specified amount per hundred is made on all milk received by Louisville handlers in the spring. In the fall the money is paid back to producers in accordance with their deliveries in each of the pay back months. In 1945, for example, the second year that the plan was in operation, the take-off rate was 20 cents a hundred weight. During the take-off period, which was April, May, and June, 53,785,484 pounds of milk was received by Louisville handlers. Multiply 537,854.84, the number of hundred weight received, by $.20, the take-off rate, and you get $107,570.97 which was the amount of money set aside out of which the fall premiums were paid. In the fall of the same year Louisville handlers received 38,036,284 pounds of milk; this was during September, October and November. Divide 380,362.84, the number of hundred weight received in the fall, into $107,570.97, the total receipts from the spring take-off, and you get $.28 plus, which was the amount of the premium paid per hundred weight in the fall of 1945. The important fact to note is that the take-off was 20 cents and pay-back was 28 cents. The reason for the difference in favor of the fall premium is obvious; fewer hundred weight of milk were delivered in that period consequently fewer hundred weight participated in the gravy.

It Works Like This

The incentive feature of the plan becomes abundantly apparant if the system is reduced down to individuals. Suppose there are two producers, Somerset and Vernon. Somerset lets nature take its course and sends in what milk his cows will allow. Vernon, on the other hand, has taken the bull by the horns, both figuratively and literally, in an effort to fit his production to most advantageous market. During the spring months Somerset delivered 400 hundred weight of milk to his handler. Vernon delivered 270 hundred weight. On the basis of a 20 cent per hundred weight take-off Somerset contributed $80.00 to the pool and Vernon $54.00. When fall comes around Somerset's cows begin to slacken off and feed is something of problem. His milk deliveries go down. Sounds familiar doesn't it. Vernon's program, however, is beginning to perk up. Many of his cows have just freshened. His program of fall pastures and supplemental feeding is in full swing. His production not only fails to decline, it actually increases. Somerset's fall deliveries amount to 200 hundredweight for the three month pay-back period, Vernon's deliveries total 520 hundred weight for the same period. Somerset's share of the premium pool on the basis of a pay-back bonus of $.28 is $56.00 while Vernon really goes to town with a choice $151.20 to take home to the little woman. Poor production control cost Somerset 24 good dollars while progressive management netted Vernon almost a hundred cold, hard bucks.

The plan was first tried in 1943. It had been preceded by a base and surplus plan that had failed to produce a levelling out of production and had threatened to wreck the market. In a recent bulletin discussing the Louisville Plan, John B. Roberts, Kentucky Agricultural Experiment Station, describes the problems of the base and surplus system. "The years following the initial assignment of bases were troublesome times," Mr. Roberts says, "as the Association changed from an 'open' to a 'closed' base policy and followed this by a series of regulations designed to correct undesirable practices and deal equitably with diverse producer problems. Generally the, the base-surplus plan was not understood by producers. Modifications designed to correct inequalities among producers and adapt the plan to market conditions added confusion and misunderstanding, and finally differences of opinion became so marked and adjustment so tedious that the base and surplus plan became a threat to the existence and strength of the Association itself. Bases were kept in effect nominally in 1934 and 1935, but payments under the plan were discontinued in 1934. During these years of trouble over bases there were other internal frictions and conflicts in the market. Strife arose when the newly organized producer association sought to find its place in the market. The problem was complicated by aggressive enforcement of quality standards by Louisville Health Officials, and by a turbulent retail market, with friction and price cutting among dealers. Also a drought in 1934 and again in 1936 reduced the flow of milk in the area.

"The effect of the base-surplus plan was to modify the seasonal pattern of receipts by causing some diversion of milk to manufacturing, encouraging shipments in the fall base-forming period and in other ways restricting total receipts. Despite its effect on supply, the plan proved unsatisfactory and unworkable under the conditions of the time."

High Production Low Consumption

After the death of the base-surplus plan an attempt was made to realize some measure of level production through an extensive educational campaign. The need for more uniform supplies was widely publicized. Cooperative purchasing of feed and financial assistance to those who would undertake to improve practices through herd improvement associations was instituted. The net result of this line of attack was an increased production without a corresponding increase in consumption. Each year market receipts and seasonal variation in production increased. A critical trend was developing which promised serious consequences. At this juncture the entire problem was reversed by the declaration of war. When the Japs dropped their bombs on Pearl Harbor they not only

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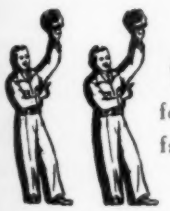
Newspaper mats, radio scripts, and folders are supplied to all users of "Cellophane" Hooding. This complete selling plan helps you build bigger routes and profits with "Cellophane" Hoods. For full information, write today!



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CAP HEADQUARTERS

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touched off a powder keg, they turned the Louisville market from a problem in surplus to a problem in critical fall shortages. Population jumped from 434,000 in 1940 to 496,000 in 1942. In November of 1943 population stood at 508,000 and by January of 1944 it climbed to 527,000. During and since the war the attention of the market has been focused on these shortages. The introduction of the Fall Premium Plan in 1943 was an attempt to furnish relief.

The Louisville Plan has not been tried out under conditions of surplus and the hazards that such a situation presents. The plan was launched during a period of increased employment, high consumer income, expanded markets, rising farm prices and generally satisfactory returns in the milk business. All of these factors tended to produce harmonious relationships in the market. However, according to students of the plan, it does not appear that farming conditions, prices, or other conditions have caused farmers to deviate from the production patterns they established in 1937 under free market conditions.

Action By Cooperative

Investigations have shown that there is a wide variation among producers on periods of peak production and that these peak periods may vary from year to year with a particular producer. Records indicate that it is possible to maintain a fairly even annual rate of production but they also show that no individual is the constant source of surplus each year. On the basis of this type of information the Falls Cities Cooperative Milk Producers Association reached the conclusion that if producers are to maintain a fluid milk market price, comparatively free of the influence of milk sold for manufacturing, the seasonal surplus problem must be tackled first and that the total market surplus and not the individual production is the primary measure. The solution to the problem was the Fall-Premium Plan.

When the plan was first introduced the take-off rate was set at 15 cents a hundred weight. This did not result in a sufficient premium to have any incentive punch and so the rate was increased until it stood at 30 cents in 1947, and is set at 40 cents for 1949. There are those who feel that this rate is still too low. When the Connecticut Plan was put into operation in the summer of '47 the take-off rate was fixed at 50 cents a hundred weight. In both plans, however, the take-off money is held in escrow by the Market Administrator; in the case of Louisville, a Federal Market Administrator and in the case of Connecticut the State Milk Market Administrator.

One of the first sources of contention between handlers and the cooperative, in fact almost the only disagreement between the two groups, has been the question of who pays the premium. Handlers felt that the pay-back should be a part of the blended fall price and therefore they should distribute the money. The producers contended that the proposal is primarily their handiwork and that the effect of a separate check representing a premium for fall milk would be more apparant than one check. The idea is that two checks would be a more striking proof that it paid to ship milk in the fall.

Calls for Public Relations

The two check system has prevailed. Every producer who ships to the Louisville market participates in the plan. The Cooperative Association, however, handles the mailing of checks to its members. Across the back of each check, printed in bold letters, are the words, "PAY-BACK CHECK". A statement showing pounds of graded milk, rate per 100 pounds, and the amount of the check is attached. One year the Cooperative accompanied the checks with a letter setting forth the objectives of the plan.

Dear Member:

In April, May, and June of this year, there was deducted from all milk producer's checks the following amounts: April 20 cents, May 25 cents, and June 25 cents. The total amounts deducted amounted to $129,665.80. All of this amount will be paid back to milk producers for milk delivered in September, October, and November. The rate used in paying this money back will depend on the amount of milk delivered.

You can readily see that it is a definite advantage to milk producers to deliver less milk during the take-off months of April, May, and June and a definite advantage to milk producers to deliver more milk in September, October, and November, when the money is paid back.

It is gratifying to know that more producers are changing the freshening dates of their cattle to conform to this plan and have been breeding cows between October 1 and March 1 and carrying those not bred over until the next breeding season. We recommend breeding heavier in October and November. The various artificial breeding associations will prove helpful for such a program.

In the future the take-off rate will be as follows, as announced by the U. S. Department of Agriculture: 1947 rate, 30 cents, 1948 rate 35 cents; 1949 rate 40 cents.

Please make your plans now to help yourself by changing the freshening dates of your cattle. It is impossible to work successfully with the plan by letting the bull run with the herd throughout the year.

Sincerely yours,

Falls Cities Cooperative Milk Producers Association, Inc.

The plan appears to be evolving slowly and successfully. Price is the motivating force,. The difference between fall and spring prices has been increased from 23 cents to 71 cents, and it should be noted that this is done independent of the blend price. The blend price is not established until after the take-off has been made. Administratively the plan is simple to operate and the records normally kept by the Market Administrator and the Falls Cities Cooperative Association are the only ones required in order to carry out the plan.

General Reaction Is Favorable

Producers as a whole look upon the plan with favor. Perhaps the first virtue in the scheme is its lack of compulsion. The program does not say "You must change your production schedule", it says, "There is a premium for fall milk. If you care to take advantage of this premium here it is. The decision is up to you." This is an important feature in a business where conditions vary from farm to farm.

Distributor reaction has also had favorable cast. Most handlers are heartily in favor of a program that reduces the hectic nature of flush and famine seasons. The record indicates that this plan has had a stabilizing influence on the market and that the premiums, which are actually price increases and decreases, can be made without disturbing consumer prices. Finally many operators feel that in addition to the efficiencies realized under the program the reduction in friction between producers and dealers and between dealers themselves is a valuable dividend.

There are some areas of dissatisfaction, of course. Some dealers think that producers are not aware that the dealer pays a higher price for the milk in the spring than the producer receives. Many producers, apparantly forget that the take-off rate comes out of the check they get from the dealer. Furthermore, many producers look upon the deductions from their check as a personal thing and, unless they get back all of the money deducted, they consider that they have been cheated. These differences do not appear to be very serious. The plan is in operation and will continue in operation for some time to come. Probably the biggest question in the minds of dairymen who have been watching the scheme unfold is "How will it work when the situation is reversed? How will it work when there is a surplus problem instead of a shortage?"

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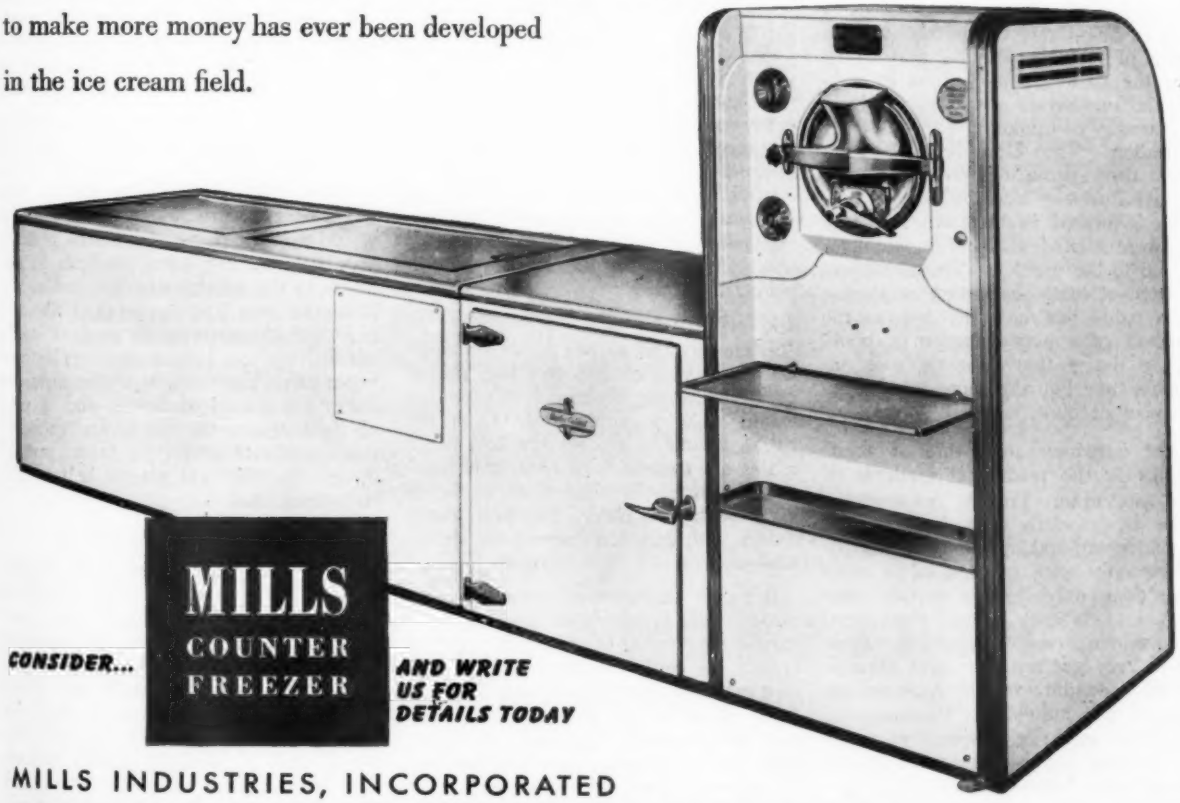
This enjoyment of *all* of the profits from ice cream can be yours easily with a Mills Counter Ice Cream Freezer. Automatic in operation, ice cream freezing is reduced to three simple steps: fill with mix and flavor, set the controls, draw off into containers. No simpler way to make more money has ever been developed in the ice cream field.



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ROUTE ACCOUNTING

A Punch Card System for the Dairy Industry

ARE ROUTEMEN SALESMEN or bookkeepers? It was this question that prompted the Crowley Milk Company of Binghampton, New York, to investigate the possibility of a system of route accounting that would leave the routeman more time to exercise his function as a salesman, which, to their way of thinking, was his proper occupation. The Crowley Company started their search in 1937. The International Business Machine Corporation, which is located in Endicott, a nearby city, were invited to assist in finding a solution to the problem. The result was a system of route accounting employing punch cards that not only relieves the routeman of a major portion of bookkeeping duties that formerly took up valuable time but also increases the accuracy of accounts.

Most dairymen are aware of shortcomings in the traditional methods of route accounting. Proving the accuracy of the drivers' daily route book posting is a major undertaking. Many times this is done only once a week or in some cases, done only once a month after bills are made out. Some dairies have the routemen make out the bills which may or may not result in neat appearing bill depending on the handwriting ability of the individual. Furthermore, under these methods of operation, accurate checking for shortages or overages is a well nigh impossible task. As a result many a routeman has paid for these shortages out of his own pocket.

The system developed by the Crowley Milk Company and the International Business Machine Corporation provides a means of eliminating these errors. The driver gets a balance between deliveries and load each day before he leaves the plant. If there is a shortage the routeman knows about it that day and can easily go over his deliveries and locate the error. The system can account for all prices, balances all bills against a control figure, prints a neat accurate bill, and, above all, takes the accounting job out of the routemen's hands and brings it into the office where it belongs.

Small Dairies Interested

Obviously this system is not economical for dairies of one and two routes, because the monthly rental of machines would make it impractical. Even the I.B.M. is unable to state just how many routes are necessary to make this practical because the degree of efficiency varies with each dairy. However, many dairies with only ten routes have shown interest.

A punch card system operates by the use of cards in which the desired information is recorded by means of punched holes. The cards are punched by means of a machine designed for that purpose. As a result of the punches the cards may be automatically sorted and tabulated to prepare an unlimited number of reports. The three elements in a punch card system are the cards, the machines, and the operators.

The route accounting system for the dairy industry uses all three elements. The driver is equipped with a series of pre-punched cards, one for each customer. If Mrs. Jones' usual order is three quarts of grade A milk, her card is punched so that it always shows three quarts of Grade A when fed into the machines. Of course, Mrs. Jones may vary that order. The driver, therefore, carries an additional file of product cards. These product cards, as may be seen in the illustration at the end of this article, cover all the products that the firm handles. The customer cards and the product cards are carried in a compact file box by the routeman. That is all the paraphenalia that he needs.

When the routeman makes a regular delivery he merely brings the customer card forward in the file. There is no written entry required; he simply flips the card forward much as a person would turn the pages of a book. If however, the customer takes products in addition to the regular standing order, the routeman goes into the product file and picks out the appropriate product cards which he places behind the regular customer card. For example, if the customer ordered a pound of butter and a pint of light cream the cards for each of those products would be taken out of the product file and placed behind the customer's card.

If Order Changes

Ah, but suppose the customer changes the order for the day. The routeman merely invests the customer card and places a product card for the quantity delivered behind it. Supposing a customer who usually purchases three quarts of milk leaves a note that she only requires two on that day; the customer card is inverted, which cancels the three quarts, and a product card for two quarts is placed behind it. When the cards are brought into the office, the

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Our new booklet, "Modern Financing Methods," explains how C. I. T. financing can help industry solve many problems. Any of these offices will send you a copy, or will answer any specific inquiry relating to the financing of machinery and equipment.

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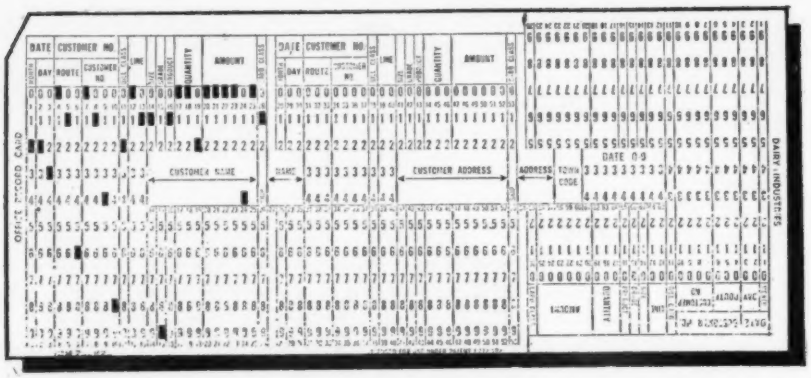

A punch card system is based on cards, such as this one, on which information is recorded by means of punched holes. This is a customer card which the routeman carries in a portable file.

machines automatically recognize the inverted card and make the proper adjustment.

Requires Fraction of Driver's Time

When the driver returns to the plant he takes the customer file, with the added product cards still in it, to the office. The girls in the office run the cards through a machine that prepares an office record card from the driver's cards. These office cards show exactly the same things that are shown on the driver's cards. It should be noted that each card is punched a little differently from its file mate in order to distinguish one customer from another. The new office cards, containing an accurate record of who bought what, are then run through a machine that sorts them according to size, grade, and product. Following this process the cards are run through a second machine that automatically prints the "Salesman's Daily Settlement Report." This report shows the total quantity of each product which the driver has charged out to his customers; so many quarts of milk, so many pints of cream, so many pounds of butter, etc. This report can be compared in a matter of seconds with the net quantity of each product on the load sheet. Any discrepancies, either over or short, are noted and the routeman has an opportunity to correct these discrepancies while the transactions are fresh in his memory. Under this system the driver not only knows exactly where he stands account-wise at the end of each day but the time that he formerly used in keeping books is now available for selling activities. This is one of the outstanding features of the method.

But the system does not stop here. A summary card of sales by products for each route is prepared automatically at the time the Salesman's Daily Settlement Report is run. These cards are used to provide sales analysis reports on a daily, weekly, and monthly basis. The important thing to note is the fact that once the cards in the driver's file are prepared all subsequent information follows *automatically.*

When it comes time to bill the customer all office record cards are run through the sorting machine where they are sorted with customer name cards and previous balance cards. Customer invoices are prepared on an electric punch card accounting machine which lists all products purchased by the customers plus any unpaid balance which may exist. This is all done in less time than it takes to write about it.

Two Sets of Cards

Two sets of accounts receivable cards are prepared, again automatically. One set of these cards is carried by the salesman, the other set is held in the office. When a salesman makes a collection he removes the accounts receivable card from the file and turns it into the office. These cards are put into a machine which automatically lists all collections made that day and the total cash received. Just prior to the next billing period the cards for payments which have been made are matched by machine with the Accounts Receivable cards which remained in the office and the cards for the unpaid balances automatically drop out. These unpaid balance cards are used in the next billing period and show on the invoice as "Prior Balance."

Although we feel quite sure that our description of the punch card system is as clear as crystal and just as valuable, lest there be those who are quietly muttering, "Pull the customer forward. Put the butter in the sorting machine and take the sales analysis report to the cleaners—" as they whittle out a paper doll from a customer's card, let's have a quick summary:

1. Driver's file containing customer's cards and products cards.
2. Driver's file returned to office where office cards are made automatically and used to prepare a salesman's daily settlement sheet.
3. Summary cards prepared from office cards which show total sales for each route and total sales for the dairy on daily, weekly and monthly basis.
4. Office record cards used again to prepare invoices which list products purchased and unpaid balance, if any.
5. Accounts receivable cards made for each invoice and used to keep collection records straight.
6. All punching, sorting, printing of invoices, sales analysis, etc. done automatically.

Drivers Like System

Many dairymen have raised the question "How about the routeman? What do they think of the system?" To judge from those dairies that have adopted this method of route accounting the general reaction among the men is favorable. In most cases the driver is not a bookkeeper and doesn't particularly like the bookkeeping tasks ordinary route accounting imposes.

Over the past eight years due to union demands and driver pressure, the income of routemen has been steadily increasing. All of this has had a direct bearing on prices to the consumer and profits. Many dairymen feel that the time is long past due when a reappraisal of the salesmen's functions should be made. Is he spending valuable and high priced time either at home or in the office preparing customers' invoices or on bookkeeping duties when his truck should be on the street? There may be a question whether the sales effort should be divorced from the delivery duties but, dairymen ask, is there a logical reason why the sales effort should be coupled with the bookkeeping duties. Are good salesmen devoting their time to direct sales effort which would increase their own earning power as well as increased profits to the dairy?

Naturally the I.B.M. system or any other system cannot take this work from the driver without increasing cost elsewhere. However, there are those who see a false economy in placing the responsibility of keeping books on to the shoulders of salesmen earning in the vicinity of $5,000 per year. The justification for the increased office expense that this type of route accounting entails is expressed in terms of new business which the route salesman can handle when relieved of these indirect duties.

General Mills Conducts Wide Retail Sales Education Program

Entrance of Firm Into Electric Appliance Field Is Subject of National Campaign Now in Operation

AN IMPRESSIVE visualized educational program has been organized and is being conducted in all parts of the country by General Mills for benefit of sales employes in the 17 General Mills sales districts, coast to coast. The primary purpose of these retail sales training meetings is to inform General Mills' own representatives and those in the electric appliance, food, and utility fields about the sponsor's entry into the field of electrical appliances.

The program:

Introduces General Mills and Betty Crocker to all these audiences.

Explains why General Mills, one of the oldest flour millers, is now in the appliance manufacturing business—why they are equipped to produce superior appliances—and how Betty Crocker contributes to the manufacture (through research with housewives) and promotion (through radio, magazines, recipes) of these appliances.

Introduces the particular appliance being released at the time, as for instance, the automatic Tru-Heat iron and pressure sauce-pan.

The meetings open with a chart presentation, which establishes the questions uppermost in the minds of the jobbers or distributors and their salesmen:

(1) What right or justification does General Mills have to be in the appliance business?

(2) What is the appliance?

(3) What are its features?

(4) How good is it?

(5) How much promotion is behind it?

(6) What is the price?

This procedure-establishing step is followed by the first half of a 17-minute sound slidefilm in color, which gives the answer to question No. 1. It explains General Mills' war work on precision implements for the armed forces. It also introduces Betty Crocker and explains her nationwide popularity with American housewives. It details her research surveys which determined "What Women Want" in their new appliances. Betty Crocker will sponsor all General Mills appliances.

The second half of the slidefilm answers questions two and three. It presents the iron, outlines such features as automatic Tru-Heat control, easy side-rest, comfortable grip and the revolutionary new thermostat principle.

To answer question No. 4—how good is the iron—General Mills uses a unique demonstrator which matches their iron against any competing iron selected by the audience from the distributor's or jobber's present stock. The demonstrator shows how long it takes each iron to achieve selected temperature and how long it takes to return to correct temperature when heat is lost during ironing.

The chart presentation is then continued to show how much promotion will be put behind the new appliances—national magazine advertising, radio, trade papers, displays, etc. A unique feature of the entire meeting is this: By changing the second half of the slidefilm, and inserting a new type demonstrator, this basic meeting pattern can be used to introduce each new General Mills appliance as it is released.

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907 No. Cedar St., Owatonna, Minn.

SHARP FREEZE SYSTEMS

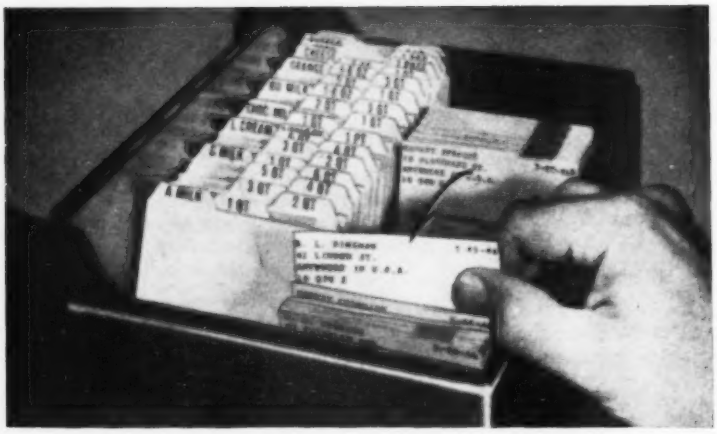
★ FASTER FREEZING

★ FROST-FREE ROOMS

★ INCREASED CAPACITY

★ LOWER OPERATING COSTS

★ MORE STORAGE SPACE

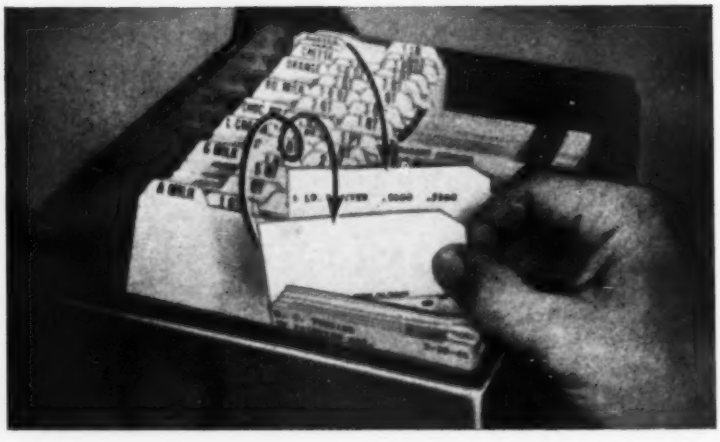


CASE ONE

If the customer takes the regular standing order, the card is merely brought forward in the file as deliveries are made.

CASE TWO

If the customer takes the regular standing order plus an additional product, the customer card is brought forward in the file, and the product cards for the additional items are placed behind it.



CASE THREE

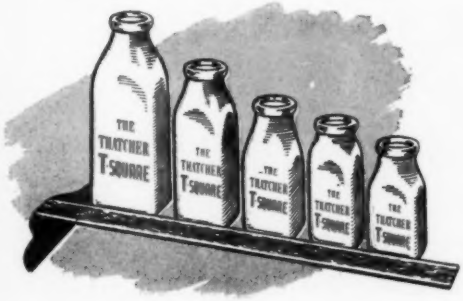
If the customer *deviates* from the regular standing order, the customer card is *inverted* in the file. Product cards for items taken are placed behind it.

No other container will do . . .

Glass milk bottles made possible the sound economy of using the same container over and over again . . . thereby giving the consumer the lowest distribution cost and at the same time returning more profit to the dairy. Any other container will result in increased costs and less profit for the dairy. Take a look at the facts.

Only glass milk bottles make 32 to 51 round trips — this cuts operating costs to 22% less than any other container.

Thatcher T-Square milk bottles enlarge cold room storage by 50% and increase truck capacities up to 63% — two of the best ways to reduce costs.



THATCHER GLASS

MANUFACTURING COMPANY, INC.
ELMIRA, NEW YORK

Smart milk dealers protect their margin of profit by using low-cost, economical T-Square glass milk bottles.

Retail storekeepers gain 50% extra refrigerator space with T-Squares — makes more sales and more profits possible . . . and returnable glass bottles bring the customers back into the store for repeat sales.

Seen through a frame of western pines the white walls of Shamrock Dairy offer an invitation to the citizens of Tuscon. Plant has grown in quarter century from one route to eighteen.

ANNIVERSARY IN ARIZONA

Pictures by
LILLIAN KAPLAN

THE GOOD SAINT PATRICK has taken an interest in the dairy business. Although the silver dotted country side of old Erin, with its peat bogs and its shamrocks is long way from the dry splendor of Arizona, the Irish green has come to flourish in Tuscon. Under the energetic guidance of a son of the "ould sod" Tuscon's Shamrock Dairy has grown into one of the State's finest food processing establishments.

In December of last year the Shamrock Dairy celebrated its twenty-ninth anniversary. The citizens of Tuscon turned out in force to honor to the occasion. And well they might for the story of the Shamrock Dairy is a proud story, worth the telling.

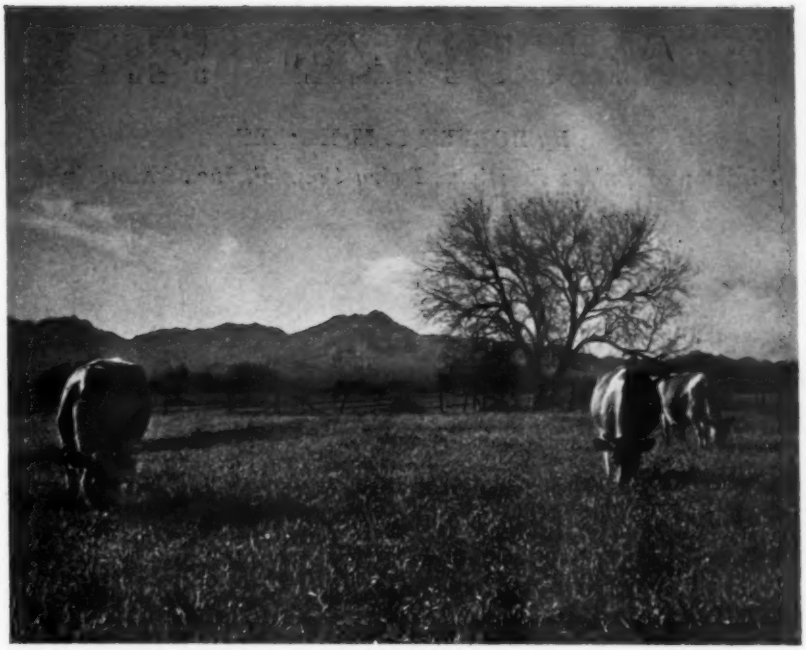
Teddy Roosevelt and his Bull Moose party were boiling across the American political scene when W. T. McClelland came to these shores in 1912. The contrast between the arid expanse of Arizona and the moist green of his native Ireland must have given the young newcomer some food for thought. He began punching cows and driving a milk truck. When the United States took up arms against imperial Germany in 1917 he entered the army and served overseas for 18 months. When the uneasy peace gave him his discharge he went back to Arizona and then to California. But Arizona had the stronger claim and in 1922 he came back to Tuscon and laid the foundations for the Shamrock dairy.

Mr. McClelland started his business with $5,000, twenty cows, and one truck. He handled 40 gallons of milk a day. In

Plant manager is genial John Hawkins shown above. Picture on the right shows the array of prizes that were awarded to winners in a contest run in connection with the anniversary celebration.

the quarter century that has elapsed the plant has expanded into a $500,000 establishment that processes 40,000 pounds of milk each day, most of it from the firms own herd of 650 cattle. The single retail route of the "twenties" has grown into 16 retail and two wholesale routes with two more retail routes to be added in the near future.

The first big change in the Arizona dairy industry came in 1926 when a typhoid outbreak brought compulsory pasteurization to Tuscon. Pasteurizing was almost unknown in Arizona twenty years ago although it had been practiced for some time in the east. The Shamrock dairy, already equipped with pasteurizing facilities found itself in an enviable position. Looking back on those early days Mr. McClelland recalls the vat pasteurizer that took 30 minutes at 143 degrees to accomplish its task. He sees real progress in modern high temperature short time methods that do the job in 15 seconds.



Tuscon is arid and mountainous but with proper irrigation and management it produces good pastures. Note the barren land in the background and the rich grass in the foreground.

Any success story is a story of people. If the young immigrant found opportunity and the good life in the South West it was partly due to the people who worked with him. As one might expect, Mrs. McClelland was a power in the dairy's development. And there was Mrs. J. B. Wilson who worked as a bookkeeper and saw the payroll grow from one man to forty. In 1934 Mr. W. J. Parker joined the firm and a year later James W. Ewing came under the Shamrock banner.

Shamrock's twenty-fifth birthday was done up in style. Balloons and ice cream won the younger generation without a struggle. A contest, with an intriguing collection of prizes, added spice to the proceedings for all ages. The visitors saw the low white building, most of them for the first time, and came away with a new appreciation of the work and care that goes into producing fluid milk.

There is something fundamental about this enterprise, about turning a desert into green pastures and building a dream into a reality. The great fact is not that Mr. McClelland's success story happened but rather that it could happen. Not that Mr. McClelland ran five into five hundred but that industry and liberty are the jackpot combination. The proof is there for all the world to see, sparkling and triumphant, on the corner of Ruthrauff and Romero Roads in Tuscon, Arizona.

Creator and builder of Shamrock Dairy is W. T. McClelland (left) shown here with Jim Ewing who joined the firm in 1935. Picture on the left shows a part of the Shamrock staff practicing what they preach.

GLAMOURIZED MILK

By ROBERT C. McKINLEY
Director of Public Relations, Dairy Council, Inc., Philadelphia

ABOUT 27 YEARS AGO some outstanding dairymen from portions of Pennsylvania, New Jersey, Delaware, and Maryland banded together to create an innovation in the field of sales promotion. They formed the Philadelphia Dairy Council, whose primary function was to encourage increased consumption of fluid milk through health education and consumer relations.

Today the Dairy Council, with its highly specialized staff, is a tribute to the judgment of those men. One of about fifty similar nationwide units the Philadelphia organization, an affiliate of the National Dairy Council, is unique in its treatment of a difficult but fundamental subject—health.

A bottle of milk is an essential package but not a glamourous one; dental care is important but not pleasant; carrots and spinach and oatmeal are necessary in the diet but not always so appetizing as meat, potatoes, and pie.

Sometimes We Stand on Our Heads

To project this story of health in a way to hold the interest of children of all ages is the primary consideration. Knowing the facts about nutrition is one thing; making the audience listen to the facts is another. The most productive method that we have found, through years of experience, is a subtle combination of instruction and entertainment, facts and fiction, sense and nonsense.

Figuratively it amounts to standing on one's head at times to capture the elusive ear of thousands of juvenile audiences every year. Puppet shows, health plays, dramatized stories, motion pictures, story books, posters, classroom instruction aids, and individual desk work all help us in reaching millions of school children, either directly or indirectly.

They, as well as their teachers, know that we're trying to sell milk but our methods make the purpose unobjectionable. Year after year hundreds of school principals welcome our return for the purpose of reiterating, in some novel and graphic fashion, the indispensibility of milk in the daily diet.

Adults are equally susceptible to dramatized health instruction provided it is a carefully blended mixture of information and pleasant listening. No one likes to be bored, especially about health and nutrition. Through the years Dairy Council has developed its own special brand of sales stimulation—a promotional service which no individual or individuals in the dairy industry could conduct independently with the approval of educational authorities.

Requests for our programs from Parent-Teacher Associations, women's clubs, luncheon and inner groups, church organizations, and numerous other sources have pyramided to startling proportions. Every year many invitations must be declined because of our limited personnel. This necessitates prudent screening of contacts in order to reach the groups through which we can perform the greatest service for those who employ us. The primary assignment of the fourteen field workers on our staff is to schedule and fill these public appearances.

Let's Talk Figures

Our records show that during the last fiscal year, one or more of our staff took part in 3,289 scheduled programs to perpetuate the story of milk. The audience attendance at those meetings exceeded 610,000 men, women and children.

These figures, however, do not tell the complete story of Dairy Council coverage by any manner of means. Through indirect presentations—motion pictures, radio, and lending projects—we reached an additional 3½ million. In other words, during one year of operation more than four million people were exposed to some type of promotional program sponsored by the Philadelphia Dairy Council.

We wish it were possible to transmute those figures into terms of specific sales increases. Unfortunately there is no formula by which this can be done. We do know through previous surveys, though, that the per capita consumption of milk in those cities employing Dairy Council tactics is significantly higher than in comparable cities where Dairy Councils do not exist. To us it seems reasonable to accept this condition as some evidence of success.

Before anyone gets the idea that our procedure is a costly one let's break it down into dollars and cents. Last year the total income for Philadelphia was approximately $115,000. With that amount we paid the salaries of 27 workers, maintained a fleet of sixteen cars, printed and distributed 1,400,000 pieces of nutrition literature, and produced a new motion picture film illustrating the power and drive in a bottle of milk. This was made in sound and full color. If there is a more economical method of cooperative advertising we have yet to see it in operation, especially in view of the fact that our activities are concentrated over a wide area, in some instances extending a distance of 250 miles.

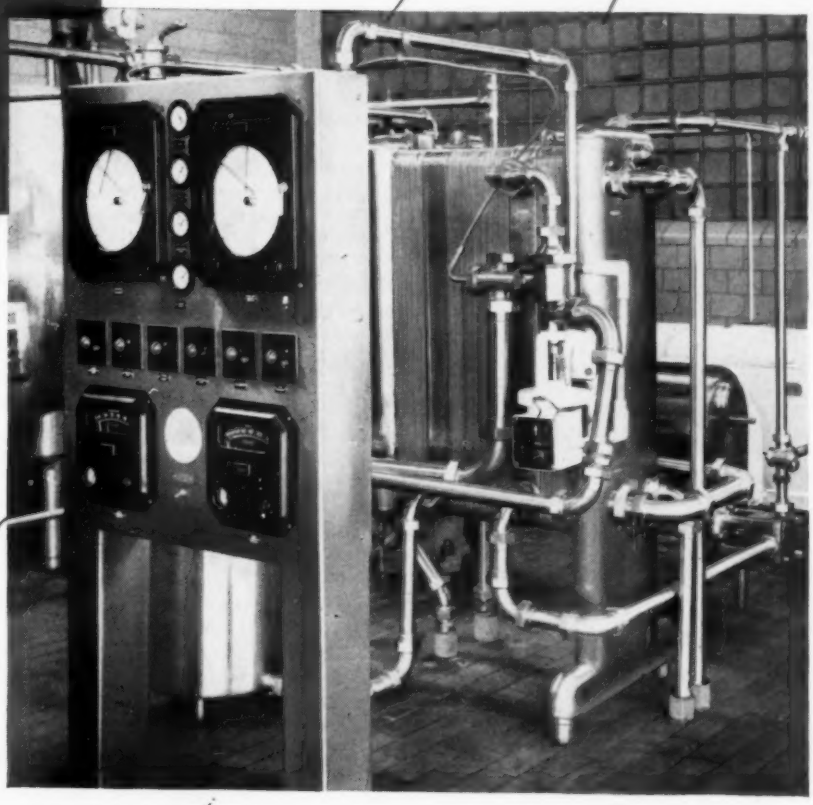
Maybe You're Lucky

Maybe you *are* lucky. Maybe in your market there are no sales problems, no competitive headaches; there are in Philadelphia. Maybe in your community the school children all spend their nickels for milk instead of soft drinks and candy bars; they don't in Philadelphia. It could be that in your market all the housewives are in complete accord with the present price levels and smile lovingly when presented with their weekly milk bill; we have seen no such Utopian state from where we sit.

If, on the other hand, you share some of our problems you probably also need a factual clearing house for the people who buy your product. The solution is an impartial agency, representing both producers and distributors, that does not deal in brand names but disseminates accurate and trustworthy information to inspire the consumer's confidence and acquaint her with some of the problems in making good, safe milk. Dairy Council meets these needs.

XUM

finer ... ALL WAYS



Cherry-Burrell's new, all-stainless Superplate Shortime, the industry's most advanced plate-type pasteurizer; also available in plain, zinc metallized, painted finish models.

The New Superplate in Stainless Steel

Superplate in *stainless steel*—the conclusive answer to the need for more sanitary pasteurizing equipment—and better performance.

. . . And along with the basic advantages of its new all-stainless finish, Superplate offers extra-performance features that will do much to combat higher processing costs, today and tomorrow.

Superplate's well-proved ability to save space, steam, labor and time has been advanced with the development of more efficient plate construction. These new plates provide greater heat transfer, are individually removable, have Supertite bonded gaskets, are easy to clean; make the best use of the heating or cooling medium for maximum efficiency in heat transfer. There are many more new Superplate features that suggest an early conference with your Cherry-Burrell representative.

CHERRY-BURRELL CORPORATION

General Sales and Executive Office:
427 W. Randolph Street, Chicago 6, Ill.

Milk and Food Plant Equipment and Supplies
FACTORIES, WAREHOUSES, BRANCHES, OFFICES OR DISTRIBUTORS AT YOUR SERVICE IN 56 CITIES

trendmaker in a great industry

And it isn't as though this program were a financial back breaker. Every member invests in proportion to his sales volume just as he benefits proportionately from its results.

Methods of financing Dairy Council vary in different localities. In Philadelphia all income is based on fluid milk sales. For each hundred pounds of Class I milk handled, the distributor contribues a penny, the producer a penny.

To cite a concrete example: a milk dealer retailing 2,000 quarts a day invests only $15 a month in Dairy Council. This sum, in turn, is matched in aggregate by his respective shippers to make a total amount of $30 a month. Not a large sum in itself but adequate when pooled with comparable investments from other companies. Through such a cooperative system it is possible to do a big job with small subscriptions.

You Can't Bat a Thousand

In some markets the majority of milk dealers have been contemplating the formation of a Dairy Council but are holding back until they have the market behind it 100%. It will never happen. If companies representing between 70% and 80% of the total market volume can be included it's to their advantage to get into operation. A few stragglers will join later, when they've seen the plan in successful operation; a small balance of "hitch-hikers" will never join. This

The Old Army Game

During our attempts to organize additional council units—some successful, some otherwise—we have encountered all sorts of impediments. Here is a pattern noted on several occasions while trying to muster the local dairy interests behind a program of this type. We call on Dealer "A" who, on several occasions, has publicly expressed enthusiasm toward our work. In the privacy of his office the enthusiasm has waned visibly and he tells us that the price of milk bottles has just gone up seventeen cents a carload, which makes it impossible for him to assume any additional financial obligations for the moment.

WANTED—AN ADDRESS

Do you happen to know the address of Mr. George J. Polifka who operates Will-O-Way Farm? If you do please write to the Editor of *American Milk Review*.

The problem is simple—we had the address but we lost it. People do, you know, even editors. A couple of months ago we published a story on Mr. Polifka's up-to-the-minute farm called "Milking From The Front End". The story created considerable interest and we have had inquiries from individuals anxious to get in touch with Mr. Polifka and learn more about his system.

Not yet disheartened, we call on Dealer "B". He feels that the whole thing is a wonderful idea but why don't we wait until the price of milk goes up. This will net the farmer more money and he'll be more kindly disposed toward a check-off.

With mental reservations we stop to see Dealer "C". He is of the same mind as Dealer "B" except he thinks he should wait until the market price of milk *drops* because the producer will become concerned about his future market and be inclined to get behind a promotional scheme!

Thoroughly puzzled, but still undaunted, we drop in on Dealer "D". He has developed a completely new wrinkle in the sales-resistance department and says he'll have nothing to do with the incorporation of a Dairy Council program. Why? Well, it seems that most of the Dairy Council posters have been illustrating pictures of round milk bottles and he uses only the square ones!

There's still one more man to see—Dealer "E". And what a pleasant surprise to walk into his office and be welcomed with open arms! He's completely sold on the entire project, thinks it's the most effective way that the industry can do a selling job. In short, he's our friend and assures us that he's ready to sign up immediately; in fact he will start making contributions on the 15th of next month . . . PROVIDED . . . we secure the cooperation of dealers A, B, C and D! That puts us right back where we started and progress suffers another year's set-back.

As Though You Didn't Know!

Regardless of the day-to-day problems which confront the industry, individually and collectively, the fact still remains that we have a tremendous selling job to do. We must sell our product and we must sell ourselves. No one else is going to do it for us; not the beverage dealers nor the fruit growers nor the grocers, all of whom are spending millions to get their share of the food dollar.

As a dairyman you are within easy reach of a potent weapon against eventual sales recession and consumer resistance. Farmers, through their associations, have proven the power of cooperative effort with their sales negotiations. The same has proven true with regard to retail milk sales in fifty of the country's major markets, through the Dairy Council.

It isn't enough to pasturize and homogenize our product—we've also got to glamourize it and tell the people about it again and again. This is one way to assure milk its rightful place in the American diet—first!

EDUCATION FOR YOUNG - - -

- - - - AND OLD ALIKE

Pasteurization, High Quality Milk, Seen As Key To Good Cheese

Harry L. Wilson Offers Five-Point Formula for Improved Cheese Manufacturing in Kansas State College Talk

PASTEURIZED MILK is a vital requirement in manufacturing uniformly high quality cheddar cheese, Harry L. Wilson of the Kraft Foods Company told the annual Dairy Industry Week meeting recently at Kansas State College, Manhattan, Kan.

Only by using pasteurized milk," Wilson said, "can the cheesemaker have complete control of the making process. Virtually unheard of a quarter of a century ago, pasteurization of milk for cheesemaking has become standard in many states. It has been found that when using raw milk it is impossible, especially at certain seasons, to make every vat top grade cheese. Some of it will show off flavors, texture defects or lower quality.

"The first requisite for making any good cheese, of course, is use of high quality milk with low bacteria count. If milk is high quality to begin with, then pasteurized, cheesemakers can have greater assurance of control in the vat. It must be ripened with a starter, timing must be absolute and accurate, for organisms multiply exactly the same under the same conditions, and curd manipulation, curing and storing can be controlled with exactness in time and temperature, resulting in uniform product.

"Of great value in pasteurization is the phosphotase test devised by federal agricultural authorities to determine whether milk has been properly pasteurized. More important, this phosphotase test on cheese determines whether properly pasteurized milk was used in its manufacture."

Wilson offered a five-point formula for improved cheesemaking: (1) properly built and equipped buildings with guarantees against contamination of milk; (2) good quality, clean milk; (3) good, active, uniform starter; (4) Approved "make" procedure to assure production of all vats will be as uniform as possible, and (5) proper curing to develop characteristic flavor.

Uniformly good cheese calls for uniform procedure throughout the process of manufacture, he said, giving two examples of precision control—on moisture content and salt content.

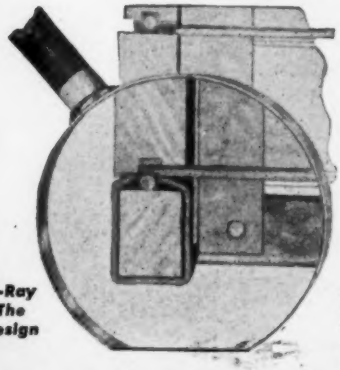
"The only way really to control moisture content is by using pasteurized milk and a starter whose quality and activity permit the curd properly to expel the whey," he said. "Moisture content may be raised by adding less starter, adding more rennet and delyaing curd cutting. Moisture content may be lowered by adding more starter, the usual amount of rennet and hastening the curd cutting. Moisture also may be reduced by more extensive use of agitators, extended cheddaring of the curd and milling the curd into smaller pieces.

"Control of the salt content depends upon the amount of moisture, for the greater the amount of moisture the more rapidly the salt dissolves and drains away with the whey."

SQUARE... Cases By CERTIFIED

Engineering Comes First to give that special design

FOR EXTRA STRENGTH AND SERVICE



X-Ray The Design

There's no secret formula surrounding the materials which go into a good milk bottle case.

Choice materials with SPECIAL ENGINEERING skillfully combined make the CERTIFIED CASE tops in the dairy industry. See the X-Ray of the design . . . how the border wire securely locks within the opening of the All Steel Bottom Runner. No drilled holes in wood, no bent wires or rivets support the bottom. It's steel-on-steel support all the way around. A feature built in every CERTIFIED CASE without extra charge.

For complete details contact your favorite dairy supply jobber or the Certified Products Co. direct.

Square Quart

CERTIFIED PRODUCTS CO.

"Certified Means Satisfied"

Canadians Seek Dominion Control In Milk Marketing

Annual Convention of Dairy Farmers at Ontario Recommends Production Costs as Basis for Price Negotiations

A DOMINION MARKETING ACT WAS requested by the Dairy Farmers of Canada at their annual convention held recently in Brockville, Ontario. Sentiment favoring government controls and "floors" under dairy products was an outstanding feature of the gathering.

Commodity group meetings dealing with whole milk, cheese, concentrated milk and butter were held during the convention. The whole milk group recommended that in the future all price negotiations should be based on the cost of production. J. S. Hyde, Dundas, Ont., introduced a resolution asking that thought be given to bringing the price of butterfat into a better relationship with the prices paid for this commodity in other dairy products.

Resolutions put forth in the meeting of the concentrated milk group were:

1. That the dairy farmers of Canada press for a dominion Marketing Act.

2. That all feed grain be handled by a grain board.

3. That all members of the organization see that all farms selling milk to concentrated milk plants belong to the Concentrated Producers' Association.

4. That an effective system of accounting be established to keep cost of production figures up to date, and such figures be compiled on a Dominion-wide basis, and that any ceiling prices be based on such cost of production figures.

"It is my understanding that the 1948 cheese export contract of 50,000,000 pounds must be filled regardless of domestic requirements," told J. L. Ballantyne, Atwood, Ont., at the meeting of the cheese group.

Delegates expressed belief there will be a swing to cheese production in Quebec in 1948 since an export price of 30 cents has been announced for this commodity. It was felt that the cheese industry is in a protected position by being favored with an export contract price. It was stressed that "Canada cannot expect that producers of primary products be asked to fill the United Kingdom 1948 contract while producing at a definite loss."

A recommendation that a "floor price of at least 62 cents be set on butter" was advanced when the group on butter met. Authentic cost-of-production figures should be obtained and used in all price deliberations.

Dairy farmers should take an active interest in promoting a public relations program to acquaint the public with the costs involved in producing and distributing butter, the group recommended.

A recommendation that controls be placed on all factors entering into farmers' costs was heard.

The public should be told of "the importance of the dairy industry in maintaining and developing a program of diversification of agriculture, soil conservation and nutritional value of foods, all of which may be hindered, materially, if an imitation for butter (oleomargarine) is permitted."

From other parts of the Dominion, restlessness among dairymen was evident. In British Columbia, Agriculture Minister Frank Putnam said recently that the B. C. dairy industry, demanding a price boost for milk in the controlled areas of the province, will make representations to the Provincial Cabinet following the return of Premier Byron Johnson from Ottawa.

Both the milk producers and the distributors have requested the provincial one-man milk board, E. C. Carr, to boost prices. Mr. Carr has recommended that the retail price of milk be increased two cents per gallon in Victoria, Vancouver, Duncan and Nanaimo, the only areas of the province in which milk prices are controlled.

It is expected that the representations of the dairymen will be made at an early date. No arrangement has been made for the Provincial Cabinet to hear them.

The Provincial Cabinet has considered a request from milk producers and distributors for an increase of two cents a quart on all milk sold in Vancouver, Victoria, Nanaimo and Duncan.

Agriculture Minister Frank Putnam disclosed this after the meeting, stating no decision had been reached but the matter will be dealt with in the near future.

If the new boost becomes effective, milk in Vancouver would be 17 cents a quart for standard and 19 cents for jersey.

Dairy Daze

By Edgar Allen, Jr.

"HEY! GRANDPAW! THIS END FAUCET WON'T WORK — BETTER CALL THE PLUMBER!"

Here's the Big News of '48
GREEN SPOT LAUNCHES NATIONAL ADVERTISING CAMPAIGN for Exclusive Dairy Distribution!
Fresh Bottled ORANGE JUICE-ADE
Delivered Refrigerated by Dairies
LIFE
Journal
McCall's
POST
PARENTS' MAG
COMPANION
Rough draft of one of the full-color ads now in production
Green Spot
ORANGEADE
FAMILY SIZE 5 DRINKS 15¢
BIG NICKEL BOTTLE
COMBINED READERSHIP
61,500,000
THIRSTY CUSTOMERS
every month!
Green Spot
HERE'S WHERE YOU CASH IN on the first big national advertising campaign on orangeade in many years. Ads like the above will appear in late spring and continue throughout the summer. The pulling power of these great national magazines will create a terrific demand for Green Spot, so get set now to tie in with the campaign. Plenty of dealer helps and merchandising material ready for you—and there's still time to investigate the advantages of handling Green Spot in your community if you're looking for a real *quality* orangeade.
SEE YOUR JOBBER!
Over 100 Dairy Supply Jobbers in the U. S. to Serve You
GREEN SPOT, INC. • LOS ANGELES 21, CALIF.

YOU CAN LICK HARD WATER

Modern Methods of Water Conditioning Produce Excellent Water at Low Cost — Annual Savings Equal to One Hundred Per Cent of the Investment Reported

By **NORMAN MYRICK**

IT IS DIFICULT TO THINK of water, so essential to the very existence of life, as being a problem. Indeed our history and our literature are so full of references to unfailing springs, gentle rains, and "paths that lead beside still waters" that it is almost sacrilege to suggest that water may occasionally be a villain. A scientist would, perhaps, point out that pure water is a truly a blessing but, being a scientist, he would add that, unfortunately, pure water is seldom found in a natural state. From this fact, the impure nature of most water, stems a large portion of the troubles that have beset users of water.

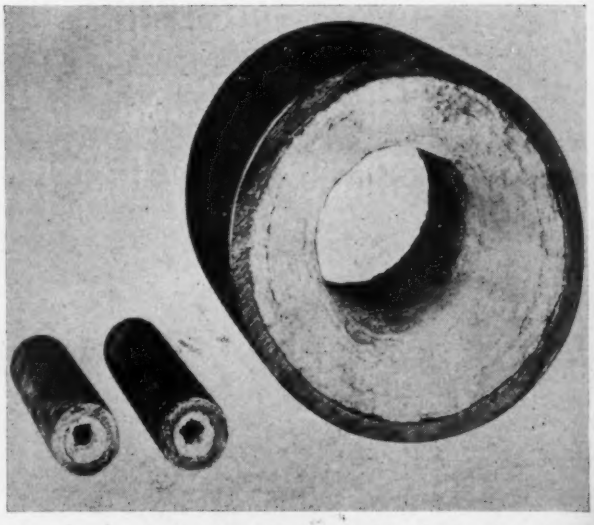
The troubles that accompany impure water range from small irritations of personal life such as an unsatisfactory shampoo or a difficult shave, to bad teeth, damaged machinery, imperfect products and unsanitary equipment. The greater part of these troubles occur in the presence of what has come to be known as "hard" water. The ruinous scale that forms on boiler tubes resulting in loss of heating efficiency and eventual burning out of the tubes is usually caused by impurities in water. Milkstone, one of the dairyman's leading headaches, is aggravated by hard water. Soap is destroyed and enormous amounts of detergents are wasted each year because of the character of the water in which they are used. In industries such as textile and paper, hard water results in poor fabrics and stained or discolored paper. In fact, wherever water is heated or treated with alkaline materials, the problem of scale will appear.

Degree of Hardness Varies

Lime and magnesia, two common substances in nature, are the causes of hard water. These two mineral substances are present in water as soluble salts; what the chemist would describe as bicarbonates, sulphates, chlorides, and nitrates of lime and magnesia. Water supplies vary and all of these salts are not always found in one supply. For example, the calcium hardness of water in an Ohio well was found to be 188 parts per million while in Sonoyta, Arizona, no calcium hardness was in evidence at all. In Post, Texas the calcium hardness was set at 103 parts per million and in a private well at Twenty-nine Palms, California the presence of calcium was listed as 30 parts per million.

D. C. Jordan of Spokane, Washington, an authority on the subject of hard water, says, "In general public water supplies range in hardness from slightly less than 1 grain per gallon to a little over 80 grains, with the great majority ranging from 1 to 30 grains. New York City water, for instance, has a hardness of from 1 to 3 grains per gallon; the water of the Great Lakes varies from about 6 to 8 grains per gallon; and many cities have water supplies ranging from 10 to over 30 grains per gallon."

The Permutit Company, manufacturers of water conditioning equipment, points out that "The hardness of various water supplies vary greatly. They range from slightly below 10 parts per million to slightly over 1,800 parts per million would cover practically all natural so-called fresh water supplies. Waters near this upper limit are unsuitable for industrial use and, while drinkable, require time for the human system to become adjusted to them. The great majority of usable fresh water supplies have hardness in the range of 10 parts per million to 500 parts per millions with some cases ranging to 700 parts per million and a few ranging above this. The hardness of flowing surface waters vary greatly, often showing marked changes in composition over a period of only a few hours."



Cross section of pipe showing how scale from hard water reduces interior of pipe. In a boiler tube scale will result in burned out tubing.

Lake water, particularly large lakes, is much more in constant in composition than the water of rivers. Water from small ponds, lakes and reservoirs, however, is likely to show considable variation in composition and changes in hardness and variations that find a maximum as much as four times that of the minimum hardness are not uncommon.

Two Types of Hardness

The variations in the composition of types of water obviously produces different types or degrees of hardness. Students of water problems distinguish between temporary hardness caused by the bicarbonate of lime and magnesia and permanent hardness caused by sulphates, chlorates, or nitrates of lime and magnesia. The former is known as the Bicarbonate hardness while the latter is referred to as the non-carbonate hardness or the sulphate hardness.

The need for soft water has increased in direct ratio to the rise of industry. The development of the steam engine, with its demand for a water that would not clog the boiler tubes with scale, was possibly the single most important factor in stimulating the search for methods of producing a "soft" water. One of the first techniques used in reducing hard water to a usable state was discovered by a man named Clark. The process was called "Clarking" and was primarily the addition of slaked lime to hard water. It is a little on the amazing side that in order to correct an overabundance of calcium in water the corrective process should call for the addition of more

New Solco
Hits New High!
SOLCO is a malt-chocolate flavored health food drink, mixed at the dairy with whole milk and distributed in standard milk bottles. For this reason Solco has too often been confused with chocolate drinks. Solco is a health food drink, superior, less expensive and more convenient than powdered formulas, sold in such large volume through drug and grocery stores for mixing in the home. You can convert the established demand for food drinks to your dairy. Offer Solco to your customers and enjoy your share of the profits in this huge food drink market . . . a market without the broad seasonal fluctuations so common to chocolate milks or drinks.

Now better than Prewar!

The new Solco Food Drink surpasses prewar standards, tastes absolutely wonderful, always calls for a second round, always calls for the biggest, fattest glass on the shelf. Prove it to yourself. *Get a free sample today.* Everyone is talking about malt-chocolate flavored Solco. The new Solco is a new sales-getter. The new Solco is hitting a new high.

If you are beginning to sense a return to rough and tumble selling, get chummy with Solco. Get acquainted with the food drink idea. Solco offers you a merchandising plan to help you hold old customers and open the door to new customers. It's a plan . . . not just another product. *Write today for your Solco sample and the amazing facts about the food drink market.*

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Rush me a free sample with your illustrated Solco Merchandising Plan!

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XUM

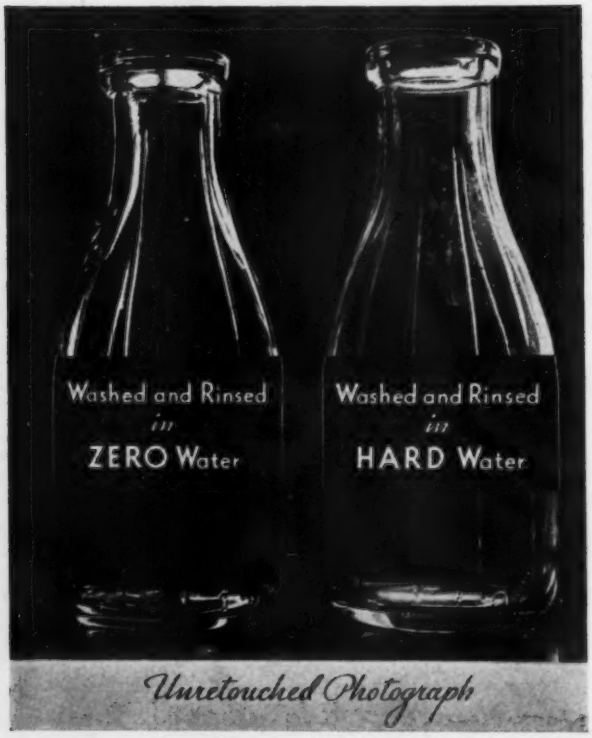
calcium. The secret of the process lies in the action of the lime which precipitates a large portion of the undesirable ingredients. This process did not offer a one hundred per cent solution to the problem. The net effect of "Clarking" was to reduce the hardness, it did not eliminate it.

The Zeolite Method

A new method of softening water was discovered early in the twentieth century by Dr. Robert Gans. His work was done with a class of minerals called Zeolites. Zeolites are known to geologists as hydrous silicates. They are found in lava formations and their virture in softening water lies in their ability to absorb or pick out the calcium and magnesium ions in the water when hard water is filtered through a zeolite bed. Over a period of time their effectiveness as purifying agents is reduced but they may be restored to full strength by rinsing with a solution of brine. The length of effective life of a zeolite filter bed is determined by the degree of hardness of the water that is filtered; the harder the water, that is the more calcium and magnesia present, the more frequent are the rinsings that are required.

The beauty of the zeolite process is twofold; it is extremely effective, the filtered water has what is termed "zero hardness", and secondly, the process is practically fool-proof. Large quantities of zeolites have been found, particularly in New Jersey.

Mr. Jordan describes the significance of the zeolite method in a stirring paragraph, "In boilers there was no longer any scale; fuel was saved. Laundries cut their soap and soda consumption in half and turned out a quality of wash which they could scarcely believe was not produced by some miracle. Textile mills found their processing troubles gone forever and industry everywhere turned to this sure and simple remedy for the hard water evil. Today more than 400 separate industries use the zeolite method of water softening and thousands of individual plants are in daily operation throughout the nation."



The wide difference in the appearance of the bottles pictured here illustrates an important phase of the hard water problem. Both bottles are clean but one will attract customers while the other will repell them.

The dairy industry is a great water user. It is estimated that the amount of water used in a milk plant is ten or twelve times as great as the amount of milk processed. Most of this water is used in cleaning. As every dairyman knows this cleaning business is one of the most constant and costly phases of milk handling; it is said to take up just about twenty per cent of the labor in the plant. Indeed, more time is spent in washing and cleaning than is spent in bottling. Bacteria in water can be removed or killed by chlorination. Sediment can be handled by filters. But hardness is neither of these and neither process has any effect on the composition of the water.

Milk stone is formed when dried or coagulated milk combines with calcium or magnesium salts. Washing cans and equipment in hard water accelerates this formation. Extremely serious situations can result from extensive deposits of this type of scale. Valves will not seat, pipes become clogged, and above all the innumerable cracks and crevices thus formed provide ideal breeding places for a host of bacteria. Thermophile bacteria, for example, persist indefinitely even in scalding water, among the milkstone and other residue.

Many dairymen have been plagued with cloudy bottles, bottles that, despite careful washing, fail to have that sparkling appearance so necessary to a good package. The trouble is probably with the water. When the detergents commonly used in bottle washing machines come in contact with the impurities present in hard water, scale and sludge are formed. Scale is a term used to describe deposits of calcium and magnesium that cling to a surface while sludge refers to loose deposits. Not only do these deposits cling to the bottles and give them the unattractive appearance that is a one way ticket to lost customers but they also play hobbs with the bottle washing machine itself. Pipes, nozzles, recirculating lines, and valves all fall victim to scale and sludge.

Boilers Are Vulnerable

Equipment that is associated with hot water, whether it is a boiler or a heater or a pasteurizer or piping is susceptible to scale formation. Boilers, particularly, are vulnerable to scale. Mr. Jordan says that "The scale which forms in heaters, hot water piping, etc. is usually due to the bicarbonate hardness of water. That which forms in the steam boiler is usually due both to the bicarbonate and non-bicarbonate hardness. When hard water comes in contact with caustic soda, soda ash or other alkali detergents, all of the hardness, both bicarbonate and non-bicarbonate, is precipitated as scale or sludge." High temperature is not necessary in order to create this precipitation, but the fact is that pressures and temperatures increase the strain on the boiler tubes.

Scale has an insulating action on the boiler tubes. The inside of the tubes becomes coated with the scale deposit reducing the amount of water that can pass through and requiring more heat to bring the water to the desired temperature. As the heat increases the metal in the tubes is subjected to greater temperatures without the cooling influence of the water. The end result is the failure of the tubes. Even if the tubes are cleaned out before the failure takes place the additional fuel necessary to heat the water is the source of increased expense.

Scale in pasteurizers is another serious problem. It is often necessary to remove the scale by chipping, not only a costly and tedious process, but also one that can cause damage to the equipment. Some operators use muriatic acid, a corrosive material that can ruin a good pasteurizer in less time than it takes to talk about it, unless the acid is handled with care.

Piping is probably the meanest of all the places where

OK... it's a STOELTING WASHER!

SIX CANS PER MINUTE FOR ANY DAIRY . . .

The Stoelting Straightway Washer is engineered for increased economy in lower water cost, greater efficiency in every operation and longer life. Every feature you'd expect to find in washers costing far more money you will find in the Stoelting Washer and yet the Stoelting Washer is the lowest priced of all comparable washers on the market. The Stoelting is the only machine that washes every size of can equally well regardless of the size of the can. Cans and covers receive four thorough washings and emerge together with cover on can to protect the sterile interior. Other exclusive features.

Lower Initial Cost
Lower Water Cost
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Trouble Free Automatic Timer
Sterile Pre Rinse
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DESIGNED TO FIT YOUR INDIVIDUAL NEEDS

Right or Left Hand Can Load
Straight — Right — or
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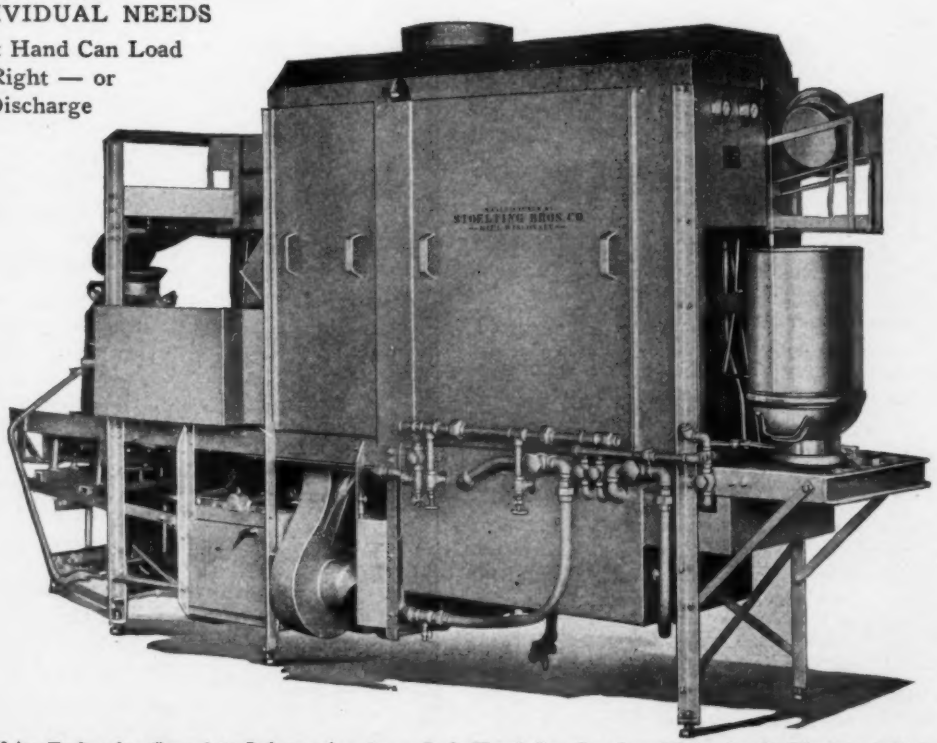
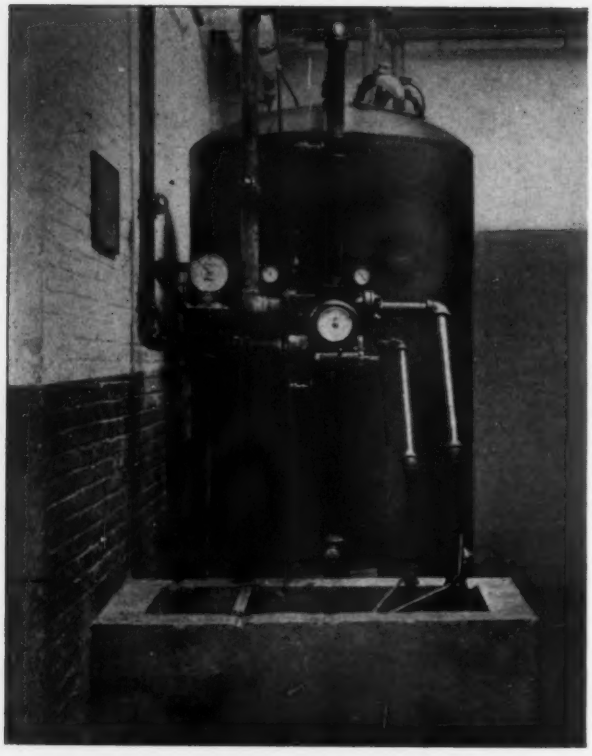


Write Today for Complete Information 4cpm Left Hand Can Load — Right Angle Discharge Shown

STOELTING BROTHERS CO. KIEL WISCONSIN



A typical piece of water softening equipment as it appears when installed. Water is filtered through a bed of crystals and comes out with a "zero hardness".

scale gathers. The modern milk plant, with its hundreds of feet of high priced pipe, is a prime victim for this trouble. No satisfactory means of removing scale from piping is known. Piping that becomes clogged must be torn down and replaced.

The St. George that slays this scale dragon is the softening process. Many dairies in all parts of the country are solving their scale and sludge problems by preventative water softening procedures. Additional refinements in the filter material have been made increasing its effectiveness and reducing the time necessary for regeneration. Pure zeolites can be regenerated by rinsing with a brine solution but cannot be subjected to the quicker more efficient acid bath. Research by water conditioning concerns has led to the development of a substance made from coal that is a non-sliceous material and can be regenerated by washing with an acid solution.

The value of soft water is the opposite of hard water. Where hard water destroys soap, soft water appears to revel in the production of suds. Where hard water creates scale deposits, soft water not only fails to produce scale but removes scale already in existence. Where hard water gives a cloudy appearance to glassware, soft water leaves it sparkling and bright. Where hard water costs money, soft water stands as an investment that pays off.

Conditioned Water Saves Money

The late Helmer Rabild reported a remarkable saving through the use of water conditioning equipment at the Titusville Dairy Products Company. "Before the installation of the water softening equipment" Mr. Rabild said, "the company bought approximately $1,900 worth of cleansing and boiler compounds during the previous twelve months. During the twelve months' period following the first operation of the water softener only $520 of cleaning and boiler compound were bought, resulting in a saving to the firm of almost $1400 on an investment of approximately $1300 for the water softener installed. In addition, the life of the boilers, pipe, and other equipment is lengthened due to the soft water which prevents scale and corrosion."

The Permutit Company estimates that hard water costs an average family in the neighborhood of $150 a year in the form of soap, damaged fabrics, plumbing expense, worn out utensils and similar considerations.

D. C. Jordan, on whom we have leaned heavily in this article, sums up the virtues of the zeolite process for softening water as follows: "When zeolite water softeners are employed in the dairy many advantages are incurred and large economies are effected. In the boilers, scale and sludge are completely eliminated, fuel is used more efficiently and shutdowns and cleanings become a thing of the past. In heaters, full heating efficiency is maintained and and scale is eliminated. No deposits are formed on pasteurizers and cleaning is unnecessary. Since no deposits are formed in valves, the cleanings are eliminated and the costs for labor, repair and replacements become only a small fraction of what they were formerly."

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Dairy Public Relations

University of Tennessee Inaugurates Unique Course in Recognition of Industry's Dependence on Goodwill

TO TRAIN PERSONS who will interpret the nation's leading agricultural industry to the public, the University of Tennessee's Department of Dairying has organized a new program of study for dairying students—"Public Relations in Dairying."

The program, believed to be the first of its kind offered by a college or university, will train students in the various functions of dairy public relations work as well as the technical and practical phases of dairy production and dairy manufacturing, said Prof. C. E. Wylie, head of the U-T Department of Dairying.

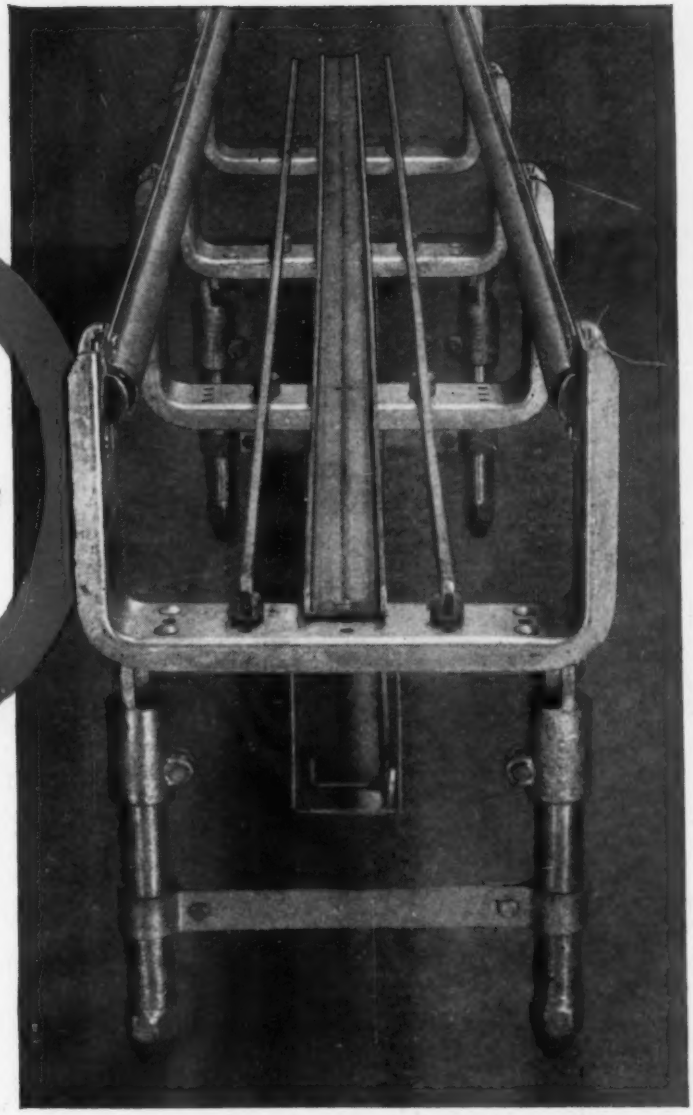
"This will be given as a special course in the dairy departments in addition to other dairy courses," Professor Wylie explained. "Students will have the opportunity to take courses in salesmanship, psychology, business law, public welfare, and other subjects relating to public relations.

Public relations phases which will be considered in the new program include studies of the relation of dairy products to world food needs; consumer opinions of foods; distribution of advertising and information regarding the dairy industry; the work of dairy organizations; work of the field man serving between the dairy farmer and the dairy industry and other related groups (the feed industry, health departments, etc.); and other subjects involving welfare, said Professor Wylie.

How...

synchronize your operations with Hi-Flex

the conveyor of today



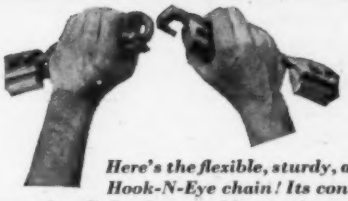
***Pre-engineered** for easy installation.*

***Standardized units**—sections, units, parts are interchangeable.*

***Easy to change**—enlarge or modify as plant needs vary.*

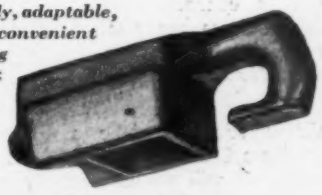
***Galvanized**—for longer life.*

In today's operations there is no place for intermittent, back-breaking production methods. Manpower must be free to do important productive duties unhampered by heavy hand-moving, case-lifting, can and carton-carrying. On this dollars-and-cents basis alone, it's time for you to find out about Hi-Flex—the simplest, most adaptable sanitary conveyor ever presented to the industry!



Only Hi-Flex has the great Hook-N-Eye chain!

Here's the flexible, sturdy, adaptable, Hook-N-Eye chain! Its convenient one-piece links give a stable carrying platform while flexing up, down, right or left, or on the straightaway. Easy to take apart, can't jump the track, no pins, no rivets, no connecting links, no concealed pockets.



CHERRY-BURRELL CORPORATION

General Sales and Executive Office:
427 W. Randolph Street, Chicago 6, Ill.
Milk and Food Plant Equipment and Supplies

FACTORIES AND WAREHOUSES, BRANCHES OFFICES OR DISTRIBUTORS AT YOUR SERVICE IN 57 CITIES

trendmaker in a great industry

Pretty girls are always good. The single shot of Barbara Zmolek of Ontario is easily the better picture. Notice how the bottles which were the purpose of the picture are an integral part of the shot. It would be difficult for an editor to cut them out of the picture without destroying the story that the picture has to tell.

PROMOTION TECHNIQUES

Pretty Girls, Professional Golf Tournament Used to Spark Recent Publicity Projects in Texas and California

IT IS A MAXIM among publicity men that the pretty girl picture is a sure fire item in the business of getting a story in the newspapers. The justification for this position can be found by looking at the magazine covers on the news stand or scanning the pages of almost any daily in the country.

The two pictures shown above illustrate the pretty girl technique applied to the dairy industry. The picture of kneeling girl is by far the better job. The picture itself is an appealing thing but the important fact is that the product is incidental to the picture but, nevertheless, an integral part of the photograph. The other picture is a little too obvious, a little too posed, but it does have a nice touch in the dairy truck with the firm's name in a position that can not be missed. This picture is part of a first rate campaign to promote orange juice carried as a side line by the Hygeia Dairy Products Co. of the Lower Rio Grande Valley in Texas. The story sent out in connection with the picture demonstrates the method of using an event as the peg on which to hang promotional publicity.

"Down in the Lower Rio Grande Valley of Texas, the Hygeia Dairy Products Co. has started a project which dairymen will watch carefully all over the nation, and the progressive Richards brothers, Harvey and John, owners of Hygeia, recently grabbed a golden opportunity to tell the story of their innovation to a big public.

"The project is the issuance of orange juice daily in quart bottles—and the golden opportunity was the $10,000 Lower Rio Grande Valley Open golf tournament at Harlingen, which most of the big golf stars of the world competed in.

"The tourney was sponsored by the Valley's fruit and vegetable industry, which in turn invited the Richards to distribute their juice free to the big name golfers during play.

"A Valley citrus producer is handling the job of processing the juice and furnishing it to Hygeia, and hopes to have numerous customers over the Southwest in a short time.

"For the golf tournament promotion, Hygeia furnished the juice in half pint bottles—just right to consume while awaiting a tee-off shot—although the juice is ordinarily marketed only in quarts.

"Pretty local girls in attractive play suits offered the juice to the golfers, and Hygeia had attendants present to handle the ice cream carts which were used because of the convenience of rolling them around from hole to hole.

"Meanwhile, hundreds of news pictures have gone out showing such stars as Jimmy Demaret, Lloyd Mangrum and Lawson Little drinking orange juice from dairy bottles."

Other picture subjects that lend themselves to publicity and advertising campaigns are babies and animals. The secret of a good publicity photograph, one that an editor is almost certain to use, is in the selection of a proper subject and the posing of the subject so that the picture tells a simple, intriguing story. The writer had occasion to release a picture in connection with some publicity at a land grant college. The picture used showed a good looking co-ed peering into a sap bucket hung on one of the campus maple trees. Twelve pictures were sent out and twelve editors used them. It was the old successful formula; a pretty girl, an interesting situation, a simple human story. That's what gets space.

Distinctive IN PERFORMANCE AS WELL AS APPEARANCE

The beauty of a Sharples Presur-Seald Separator or Clarifier is indicative of the advanced engineering and painstaking manufacture which extends to its every part.

The polished, solid nickel-alloy frame, cover and motor housing encloses the finest and simplest mechanism with which a dairy centrifuge has ever been equipped... an all-stainless bowl that has higher throughput capacity and greater sediment space... a sturdy driving mechanism having far fewer parts than any other... a fully enclosed motor built to operate without a clutch.

And, too, the eye-appeal of Presur-Seald machines results from the fact they were designed to be the most sanitary of separators or clarifiers and are built throughout to *stay new for a long, long time.*

DAIRY EQUIPMENT DIVISION

THE **SHARPLES** CORPORATION

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GETTING MORE MILK FOR BRITAIN

By CLYDE HIGGS

There are few places on earth in this year of 1948 where the milk supply is equal to the demand. Particularly in Europe and England is the problem, created by a heavily swollen demand, acute. In this article a Birmingham business man turned farmer describes British efforts toward increasing their milk supply. Mr. Higgs speaks not only as a large milk producer but also as Chairman of Britain's National Farmers' Union Machinery Committee.

●

IN ENGLAND AND WALES there are about 37 million acres, of which 24 carry crops or grass, six are rough grazings and the remainder is devoted to houses, industry, etc. On this land are packed 727 people to the square mile, as compared to 45 in the United States. The farms are stocked with three million cows, their followers and other classes of livestock.

Both for national economic reasons and for the benefit of their own industry, the majority of British farmers are anxious to attain maximum production, though there are divergent opinions as to what that might be. The economists, dealing more in figures than in actual farming facts, believe that there can be no material numerical increase in dairy herds if Britain is to maintain a balanced agriculture. Most farmers agree that rabid specilization is out of date, and, accepting these premises, the problem of milk production becomes one of getting more milk out of the same cows.

Dairying is the major department of English farming having a turnover of about $600,000,000 annually. It is made up of 160,000 producers whose herds average 15 cows—one-half of the herds contain less than 11. England is a land of small farms, in fact, 40% of the holdings of 50 acres and upwards occupy less than 100 acres each. There is plenty of room for all sizes within the mosaic of British farming. Some farmers excel at one job, some at another—the resultant mixture makes English farming interesting and attractive.

Organized Marketing

Milk production is the best organized department. In order to obviate, so far as possible, slumps and booms dairy farmers organized their selling arrangements in 1933 by a scheme which was supported by 96% of the producers. Previously, price bargaining had been nominally carried out between distributors and the National Farmers' Union although the agreements were less observed as supplies increased.

Since 1933, all milk has been bought and sold through the Milk Marketing Board which has acted as the agent of the Ministry of Food from 1939, and will, no doubt, continue to do so for some time to come. From the inception of the scheme until the outbreak of World War II the amount of milk sold off farms increased by 30%; this depended to a great extent on imported feeding stuffs. In fact, some farmers had reached the stage where their land was nothing more than an exercise ground for their cows. Imports were drastically reduced during the war and remain so now, consequently an increase in 1947 of 10% on the 1939 figure is no mean performance. The annual supply reaches nearly 1,250,000,000 gallons, mostly distributed as liquid milk. Daily average consumption of 0.65 pints is approaching the U.S.'s figure of 0.72. British consumption is probably affected by the general shortage of food. On the other hand, people have become so milk-minded that there should be no difficulty in maintaining a high level of consumption when normal times return.

The Milk Marketing Board does not confine itself solely to selling; it takes an interest in many matters affecting production. In 1947, a preliminary experiment in communal grass drying provided sufficient information about this difficult process to warrant the establishment of further centers. Standing grass is bought from the farmers; it is harvested and dried; then the grower has the option of purchase at fixed prices. There are many difficulties to overcome, the main one being to deal with the flush of luscious young grass, while keeping the equipment within reasonable capital expenditure limits. Most of England and Wales, with the exception of low rainfall areas, is suitable for grass production; the difficulty is to conserve the excess, for use in winter months when grazing is unavailable.

Attested Herds

Steps are being taken to improve the quality both of the milk and the animals from which it comes. Accreditation brings a bonus of 2 cents a gallon. To qualify, the herd has a veterinary inspection and the standards of production must be reasonable. Most of the liquid milk is pasteurized, though this process is regarded as a method of making good milk better, rather than the correction of producers' mistakes. Tuberculin-tested milk carries 6½ cents a gallon extra. Here the standards are much higher, the farm is rigorously inspected and the cattle must pass the test twice annually, all reactors being removed forthwith. Unfortunately, most of the reactors are still being sold in the open market. At the tree top are the attested herds; isolated from doubtful neighbors, they are not allowed reactors; if one should appear the herd is under suspicion and retested every 60 days until clear. Altogether, about 15% of the milk comes from tuberculin tested cattle.

The smallness of the herds has emphasized the bull problem. A farmer with 15 cows cannot usually afford a good bull. There have been communal bulls, many of these partly financed from public funds. The arrangement is unsatisfactory because of the risk of spreading disease. Alternatively, some farmers have kept a bull of the lowest "licensed" standard simply to get their cows in calf. Others have not troubled to breed, but have replaced their dry cows by purchases in the local market.

Nothing can be of greater help to the milk producer than the development of artificial insemination. The Board started operations in 1945 with notable success. The service is being cautiously extended by the Board and other organizations with the objective of a station within reach of nearly every dairy farm. A modest fee of $5.00 per insemination gives the small farmer the use of superior sires and should materially improve the standard of the cattle, while helping to prevent the spreading of disease.

Records Increase Yields

But the success of milk production depends greatly on the attention paid to cows' individual performances. Without accurate and detailed information as to these, little can be done to improve the standard. Milk recording was launched by a few enthusiasts over 39 years ago and before World War I was carried on by local societies with British Government financial assistance. For a long time membership was re-

stricted mainly to pedigree breeders. In 1943 the Board took over the organization of milk recording with financial help from the Ministry of Agriculture. Success was astonishing. The 4,000 herds increased to 18,000 by 1947, thus raising the percentage of recorded cows to 17.5. In the same year nearly two million butter fat tests were made. At present there is no general scheme of cash inducement for the production of high butter fat milk but no doubt the time will come when payments will be based on the quality.

Records of output give the farmer an intimate knowledge of the animals' individual performances — not, say, 35 gallons from a herd of 20, but so much from each cow—so that he is able to cull the passengers and correct adjustment of rations according to yield. Moreover, a sound recorded cow always commands a good price. Some herds are recorded at every milking, the majority only during a 24-hour period weekly, and experiments have proved that these figures are sufficiently accurate for all practical purposes. An itinerant official makes surprise checks every five to eight weeks and, at the end of every year, the figures travel to headquarters there to be collated by statisticians. The results are interesting. Friesians head the yields with 2,700 herds averaging 8,363 lbs. per cow. Ayrshires are next with 7,215. Then follow the other breeds—of which we have too many—giving an overall average of 7,132 lbs., for 15,000 herds. Taking over 3,000 herds continuously recorded for 4 years, there is a rise of 12% in the average yield, a clear indication of the value of figures on the farm.

Undoubtedly the Milk Marketing Board, which saved the British dairying industry from collapse in 1933, has many useful functions to perform. With the many development schemes in hand, Britain's dairy farmers can look forward with confidence to the future, irrespective of possible competition from overseas.

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New 3X Milking Record

Virginia Holstein Completes 365 Day Test With Official Record of 32,756 Pounds of Milk

TAKING HER PLACE with the great Holstein-Friesian cows of past and present, Pinelee Posch Millie Girl 2153759, owned by Charles R. Hope & Son, Purcellville, Va., became on December 9, 1947, the highest milk-producing cow in the United States today being milked three times daily.

"Millie" completed her 365-day test with an official record of 32,765 pounds of milk and 1120.2 pounds of butterfat, the second highest 3X milk record in U. S. dairy history, surpassed only by Mtn. Maid Ruth Battels Tietje, owned by Archie Allison, Cheyenne, Wyoming, who produced 34,004 pounds of milk and 945.4 pounds of fat in 1934. (Translated into quarts, "Millie" produced enough milk to supply 22 families with 2 quarts a day every day for a year.)

Millie's record makes her the highest-producing Holstein cow in history for both milk and fat south of the Potomac, regardless of number of times milked. In addition, she now holds the distinction of being the 4th cow in the United States ever to produce 32,000 pounds of milk being milked 3 times daily.

Approximately 150 people gathered at her home barn to witness the midday milking of her final day. Milked by Roland Hope, her handler for the past year, she produced close to 17 pounds, ignoring the crowd completely. At her peak last January, she produced 128 pounds of milk daily. She was fed at her peak 45 pounds of grain each day in addition to her fill of hay and silage. She has several other records to her credit, gained prior to her most recent test.

Yes, Mr. Dairy Plant Operator, what a boost in volume and profits that would mean to you!

And you *can* get more top quality milk if *more* of your producers do a good job of killing bacteria. That's where the LO-BAX "PMQ" plan pitches in for you.

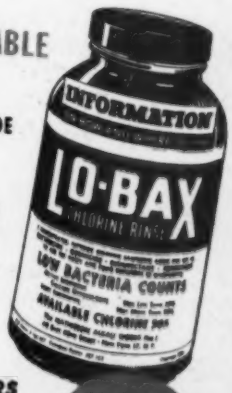
In dozens of ways, the "PMQ" program shows your producers how and why they should use a chlorine rinse consistently. You are given persuasive LO-BAX letters and folders for enclosing with milk checks. You get attractive LO-BAX posters, milk house instruction cards and booklets on milk sanitation—merely by handling LO-BAX. You get *regular* help in LO-BAX farm paper and radio advertising—doubled in intensity this year.

Ask to see what's included in the LO-BAX plan. You'll want the help it can give in raising your profits, in boosting your volume and strengthening your competitive position. Write The Mathieson Alkali Works (Inc.), 60 East 42nd Street, New York 17, N. Y.

LO-BAX 50% AVAILABLE CHLORINE

A HIGHLY EFFICIENT CHLORINE BACTERICIDE

- A FAST KILLER
- EASY TO HANDLE AND USE
- STABLE (doesn't lose strength)
- GIVES CLEAR DAIRY RINSE SOLUTIONS
- READILY DISSOLVING
- HARMLESS TO COWS' UDDERS AND MILKERS' HANDS



PMQ PROTECT MILK QUALITY

Mathieson LO-BAX

Lo-Bax . . . Super Nufos . . . HTH-15 . . . Dry Ice . . . Carbonic Gas . . . Ammonia, Anhydrous & Aqua . . . Caustic Soda . . . Soda Ash . . . Bicarbonate of Soda . . . Liquid Chlorine . . . Chlorine Dioxide . . . PH-Plus . . . Sodium Chlorite Products . . . Sodium Methylate

SAGA

OF THE

SNOW

By JOHN M. KAVANAGH
Fleet Supervisor, Hegeman Farms

T'was the day after Xmas, a Friday you know
When first was born the Saga of Snow.
It began with a soft, light, feathery fall
That covered the houses streets and all.

It sifted down as our trucks tried to go
Sliding and spinning through drifted snow.
Abandoned cars made the going tough
But our trucks and men cried never enough.

Busses and trolleys were stalled in the snow.
Trains huffed and puffed, but could not go.
But milk trucks, through the storm rode on
Conditions rough, nerves frayed and gone.

Then, as blocked became the road
Jangling phones cried for help to deliver a load.
Five calls, ten, twenty and more
While the mechanics strove to even the score.

Skidded on ice, jammed in the snow
Come pull me out, help me to go!
Lost my chains, can't pull a pound
Please rush help to get me around.

Another call! Another jam, more delayed loads.
Hour after hour, we rode the white roads.
Pulled 'em out of drifts, got them on the way
And so it went, all through the hectic day.

Still it snowed as the dark settled down
Covering all with a wintry white gown.
Twenty hours, thirty, the struggle went on
As mechanics worked, till supplies were gone.

Tired and worn, unshaven and weary
A job well done, though exhausted and bleary.
These men were heroes by thought and deed
As our milk trucks rolled in time of need.

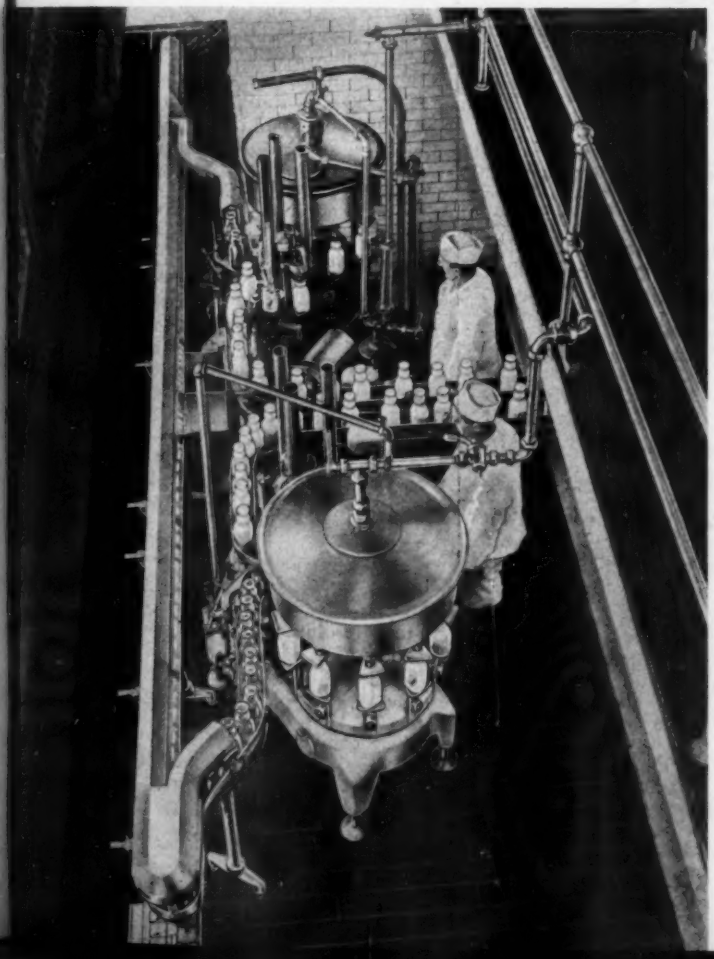
And so, when ere you speak of the Great
And talk of the "Snow of Forty-eight",
Remember the men who got them through;
The trucks that carried your milk to you.

THE A-1 FLEXIBLE LINK CONVEYOR

PROVIDES THESE OUTSTANDING FEATURES

- **All stainless construction.**
- **Easily dismantled for cleaning by removing chains, discs, adjustable rails and hoods.**
- **Chain drives around a corner.**
- **One or more links can be removed by hand without the use of tools.**
- **Power unit enclosed.**
- **Conveyor designed in a curved line . . . requires a minimum of floor space. Use of 45° and 180° angles permits closer coupling to working equipment.**

Write for Illustrated Booklet



The above view showing 180° angle, illustrates the sanitary attractiveness of all-stainless construction.

At left is overhead view emphasizing the compactness of the installation at the St. Lawrence Dairy.

LEADING DAIRIES USE THE A-1 FLEXIBLE LINK CONVEYOR. The illustrations show A-1 Conveyors installed at the St. Lawrence Dairy, Reading Pennsylvania.

For a smooth, speedy production flow, and over-all economy in time, space, money and man-power install an A-1 Flexible Link Conveyor.

FAST—CONVENIENT—SAFE—SANITARY

You can add modern efficiency to the conveyor you are now using by equipping it with A-1 Flexible Link Conveyor Chains. Our skilled engineers will gladly help you with your particular conveyor problem and show you how an A-1 Chain can speed up your intra-plant transportation.

Manufacturers of A-1 Patented Flexible Link-Conveyors (patent No. 2080301) for the dairy, beverage and food industries—and split sprockets and oval chains for all conveyors.

A-1 BOTTLING MACHINERY CO.

P. O. Box 96 **DOVER, N. J.**

Mississippi Dairy Products Association Annual Convention

Two Hundred Attend Recent Meeting of Southern Dairymen — N. D. Brookshire Chosen to Lead Organization

TWO HUNDRED DAIRY PLANT operators, fieldmen and supply men gathered February 5 and 6 at Hotel Buena Vista, Biloxi, for the 31st annual convention of the Mississippi Dairy Products Association. Association officers elected for the coming year are N. D. Brookshire, Brookshire Ice Cream Company, Meridian, President; W. L. Rigsby, Carnation Company, Tupelo, Vice-President; F. H. Herzer of the Dairy Department, State College, Secretary and Treasurer. M. C. Cooper, Cooperative Creamery, State College, was elected as Director of the Butter Division for three years; and W. C. Rigsby, Director for 3 years for the Evaporated and Condensed Division.

The Magnolias elected C. A. Miller, Hudson Mfg. Company, President; Harry Tarver, Ice Cream Novelties, Vice President; and C. A. Meharg, Lilly Tulip Company, Secretary and Treasurer.

At the annual banquet the Magnolias presented F. H. Herzer with a traveling bag in appreciation of his services to the Dairy Industry. George McLean, civic leader of Tupelo, Mississippi, was presented a pen set engraved: "George McLean—In recognition of the services rendered the Dairy Industry of Mississippi—Mississippi Dairy Products Association—Biloxi 1948".

Theme Is More Milk

The general theme and background for many of the discussions was "More and Better Milk – More Profitable Milk —More Uniform Supply of Milk".

Al Latting, President of the Magnolias, F. H. Herzer, Secretary-Treasurer of the Mississippi Dairy Products Association, R. G. Pooley, President, Elmer Powell, Manager of Research Farms, Ralston Purina Company, and Raymond Skinner, Memphis, Tennessee, appeared on the first morning program. Dr. Frank Welch, Dean of the School of Agriculture, Mississippi State College, and Clayton Rand, editor, author, humorist, spoke at the first noon luncheon.

The program of the manufacturing milk group featured a talk on quality by Dr. E. H. Parfitt, Sanitary Standards of the Evaporated Milk Association. W. E. Schmidt, field representative of the Borden Company; A. H. Simmons, District Fieldman, Pet Milk Company; L. A. Higgins, Extension Dairyman; D. Mercier, President of the Mississippi Artificial Breeders Cooperative; and Cecil White, Extension Service, Carnation Company, covered various phases of more profitable milk production for Mississippi dairymen. J. W. Chrestman, Kraft Foods Company, T. J. Ousley, Swift & Company, and H. G. Rogers, Armour & Company outlined the plans of their respective organizations for 1948 for securing more and better milk.

Hibben Heads Ice Cream Program

Heading up the Market Milk and Ice Cream Division program was a discussion by Bob Hibben on "Industry Leadership". Raymond Skinner and M. G. Ness followed through with timely talks on market milk. Fred Yoars outlined the precautions that must be followed in meeting consumer acceptance for packaged ice cream.

The Magnolia party in the Marine Room, the annual banquet, and a Novachord concert by Oakley West highlighted the entertainment.

The A. D. A. Directors Breakfast was presided over by Ed Martindale, Secretary. The plans agreed on a one cent deduction for June. Funds were also set up to stimulate quality milk contests among 4-H Club groups as well as assist in financing judging teams to the various shows and contests. H. A. Benson gave an outline of the projects and policies to be followed by A. D. A. in 1148.

Wilbur Carlson of Kraft Foods Company told the group of the need to dignify the industry and acquaint the people of the State with the economic importance of our work. George McLean, Tupelo, Mississippi, concluded the meetings by outlining the phenomenal agricultural development of his home community through leadership, and local capital. "The development of any community is only limited by the resourcefulness and initiative of its people. Depend on local capital for permanent growth."

Urge College Improvements

The Convention endorsed a program for improving the facilities of Dairy Department at the Mississippi State College and urged the legislature to appropriate the necessary funds. The legislature was also urged to consider the appropriation of funds for the purpose of providing equipment and buildings needed by the Mississippi Artificial Breeder's Association in carrying on their work. The Extension Service program in the State was also commended and additional funds were requested in order that the organization could function more effectively. These recommendations were expressed in the form of resolutions. Other resolutions conveyed the appreciation of Association to the individual responsible for the success of the meeting.

The convention city for the next year will be selected by the Board of Directors and will be announced at al ater date. The city to be selected is a matter of considerable speculation.

WHITING MILK AWARDS

Cash prizes totalling $400.00, and citations for quality improvement of milk, were made to eight farmers of the St. Albans Cooperative Creamery by Whiting Milk Company of Boston at the Cooperative's Annual Meeting on Monday, January 12th at the Owl Club, St. Albans, Vermont.

Burt H. Hack, Country Buyer for Whiting, and C. M. Stilphen, a member of the Cooperative, presented the Awards, which were classified in two categories:

1. For lowest average raw bacteria count in 1947.
2. For best improvement in average pasteurized bacteria count in 1947.

Winners in Class One were: $100, Miss Mary Dexter of Swanton; $50, Miss Katherine Gillen, Fairfax; $30 Mr. Leon Costa, St. Albans $20, Mr. Albert Benoit, St. Albans.

Class Two winners were: $100, Mr. Leon Costa; $50, Miss Katherine Gillen; $30, Mr. Euclid Magnum, Fairfax; $20, Mr. George Rand, St. Albans.

Prizes were awarded at the noon dinner session of the Cooperative's meeting, and considerable interest was aroused among the members in plans for making the incentive program for quality and production improvement and annual event.

R. C. Sunderland, President of the Cooperative, presided at the Annual Meeting.

Speakers included R. C. MacWilliams, Franklin County Agent and Robert Fitzsimmons, Franklin County Agent At Large.

In Your Plant Too-

DAMROW Vapor-Film PASTEURIZING *can mean*

- **Improved Production Speed**
- **Greater Protection of Milk Quality and Flavor**
- **Lower Operating and Maintenance Costs**

You'll save valuable production-line minutes and hours with the Vapor-Film method of pasteurizing. It heats to peak temperature quickly, smoothly, without a chance of hot spots or burnt flavor — and holds the heat more uniformly. With Vapor-Film heating there's no water to slow up the heating and take extra fuel — no hot water to "hot spot" the milk tank — no possibility of lime, waterstone, or sand building up in the heating chamber to cut heating efficiency and cause overhaul service expense. Heating the "natural" way from the bottom up, — the Vapor-Film has much more heating surface and is equally efficient with small quantities of milk.

Add the advantage of DAMROW **Vapor-Film** Pasteurizing to your plant. You may expect prompt delivery in capacities from 50 to 1000 gallons. Write, wire, or clip the coupon below.

Damrow Bros. Company
204 Western Avenue, Fond du Lac, Wisconsin

Please send us latest bulletin on DAMROW VAPOR-FILM PASTEURIZERS.
Capacities about ..... gallons.

Name .....
Address .....
City ..... State .....

DAMROW
COMPLETE EQUIPMENT FOR THE DAIRY INDUSTRY

E. J. DAVIDSON, Dairy and Poultry Division, Wilson & Company
41st St. and South Ashland Ave., Chicago 9, Ill.

S. W. DENNIS, Crown Cork & Seal Company
Eastern Ave. and Kressen St., Baltimore 3, Md.

L. F. FRIEND, Mid-south Milk Producers Association
Towers Building, 1497 Union Ave., Memphis, 4, Tenn.

G. H. FULLENWIDER, Oregon Dairy Products Commission
Carlton, Ore.

M. H. KIEFFER, Gude Brother, Kieffer Company
159 Second St., Jersey City 2, N. J.

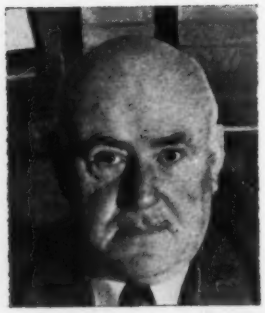
DAVID M. MOJONNIER, Mojonnier Brothers & Company
4601 West Ohio St., Chicago 44, Ill.

E. F. RICKELMAN, Buhl Manufacturing Company
2730 Scotten Ave., Detroit 10, Mich.

H. F. SIMMONS, Michigan Milk Producers Association
406 Stephenson Building, Detroit 2, Mich.

R. M. STEINHAUER, Madison Dairy Produce Company
1018 East Washington Ave., Madison 3, Wis.

O. R. THOMPSON, Rib Lake Dairy Company Co-operative
Box 88, Medford, Wis.



READ AROUND FROM LOWER LEFT.

TEN NEW DIRECTORS FOR NDC

DC

ILK REVIEW

"SAY IT WITH Sales!"

Out of the Industry-wide "cabinet session" in Chicago March 1 and 2 comes a business plan—plus action. The Industry in meeting the problems of the day and the future will "*Say It With Sales!*" This is more than a slogan. It's a program . . . industry-wide in scope . . . year 'round in action. The Industry voted to move forward with potent and pointed ADA sales-making action through advertising, merchandising, aggressive publicity and sales-wise research 12 months in a row—month after month. The drive is under way. This is your ADA on the sales-front. This is your ADA—expanding and developing the markets for dairy foods. This is business action the ADA way.

American Dairy Association is an association for nation-wide promotion, advertising and research supported by America's dairy farmers.

American Dairy Association

20 N. Wacker Drive Bldg., Chicago 6, Illinois

XUM

WORLD FOOD OUTPUT RISES

Supplies Still Below Pre-War as Population Gains — Cancel Out Effect of Increased Production — Conditions Seen Favorable for Good Crop Year

THE WORLD'S FOOD production is rising slightly, but the food shortage in some deficit producing areas is more critical than a year ago, and, because of a 10 percent increase in population, per capita world food supplies are substantially below prewar, according to the U.S. Department of Agriculture.

A report by the Department's Office of Foreign Agricultural Relations states that world production of most major foods for 1947-48 is slightly above 1946-47, but still below the prewar average. Sharp reductions in food output in deficit producing countries, because of unfavorable weather, have compelled many of these countries to reduce already low rations, and even these lowered rations can be maintained only by most careful utilization of domestic food supplies, and by receiving as much help as possible from exporting countries.

The OFAR report says that the present outlook for 1948-49 world food production is somewhat more favorable than a year ago because of larger acreage planted in winter crops, and better growing conditions so far. It adds that if these more favorable conditions continue until harvest, a moderate relaxation in the present tight food situation seems likely for the 1948-49 consumption year, but that per capita supplies will continue somewhat below prewar, especially in the deficit countries.

1947 a Poor Food Year

Food production in 1947 showed most marked decline in western Europe, including Scandinavia. Severe freezes, which caused extensive winter-kill of fall-sown crops, were followed by serious drought, and breadgrain production throughout Europe, excluding the U.S.S.R., was almost as small as in 1945, and fell below 1946 by about 300 million bushels or 16 percent. Moreover, supplies of feeds, particularly hay, root crops and pasturage, were reduced so seriously in some parts of western Europe that extensive liquidation of livestock has been necessary.

There have been unusual efforts to move foods from exporting countries because of these deficits, and the United States, largely because of a record wheat crop, will export from 520 to 570 million bushels of all grains. However, this country's overall food exports have been limited by a drop in crop production compared with 1946, the largest decrease being in corn production. Unusually favorable conditions for the wheat crop in Australia and Argentina have increased the supply of cereals available for shipment to deficit areas over the amount foreseen last fall, and some exports of feed and foodgrains also are being made from the U.S.S.R. and some eastern European countries. Nevertheless, these larger supplies are insufficient to offset the decline in other countries of Europe.

Far East food supplies also are slightly better than appeared probable last fall. Weather conditions during November and December were generally favorable for rice and other late crops. This improvement is not enough to permit significant exports of food outside of Asia, but may, however, result in some reduction in food import needs.

The change in the overall food supply position of the Far East since before the war has been an important factor in the world food shortage of the past three years. The Far East in 1935-39 was a net exporter of about 4.5 million short tons of rice, sugar, oilseeds, and other foods, but in 1947 it was a net importer of about 6.5 million tons of food, mostly cereals from the United States, Australia, Canada and Argentina.

Difficulties Among Importing Nations

Food consumption in other parts of the world is continuing at about the same level as in the past two years, but it has been exceedingly difficult for importing countries to obtain their usual supplies because of sharply rising prices and a shortage of exchange.

World rice production has risen to about 96 percent of prewar, because of a favorable season in most Asiatic countries. Supplies of milled rice are about 2 million tons larger than last year. A large part of this increase however is in China, the Philippines, Korea and other food-deficit areas, where it will be consumed locally, and exportable supplies are still far short of prewar.

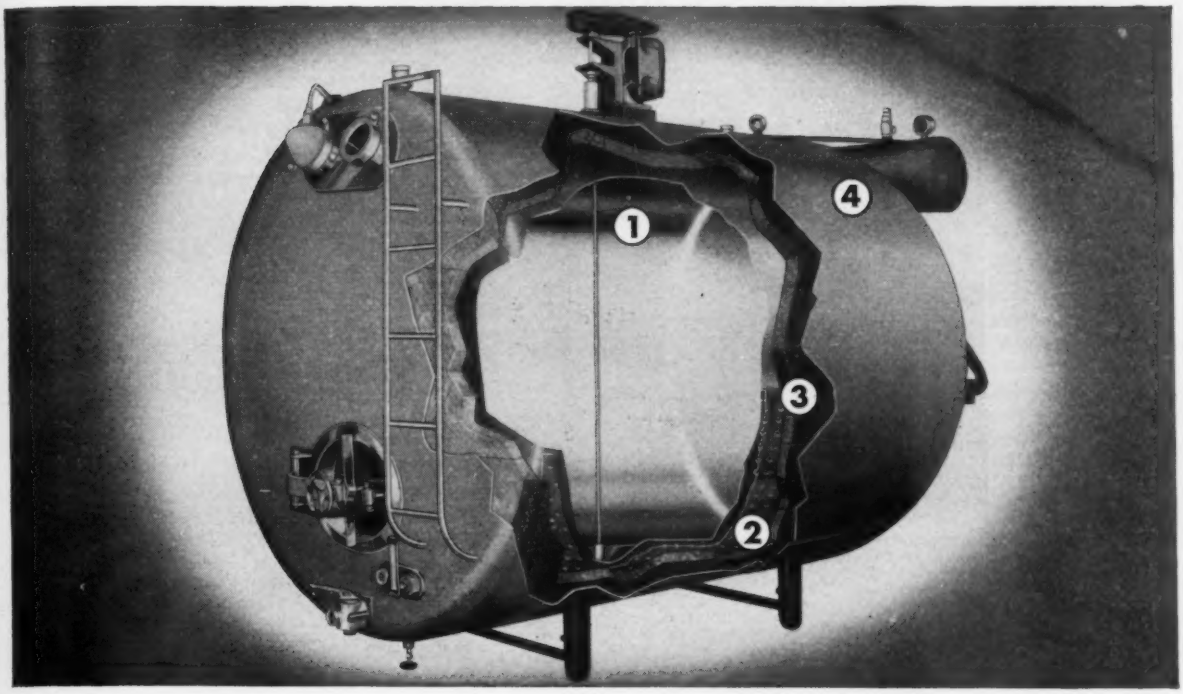
World breadgrain production in 1947 was only slightly above 1946, and below prewar. In many of the large deficit producing areas, production was considerably below 1946, and with the widespread demand for cereals as a substitute for

(Please turn to Page 67)

Creamy Smooth
FULL BODIED ICE-CREAMS
Are Made with
TRADE BODY-GUARD MARK
The Stabilizer that Guards Your Quality
Write for Folder No. 207 describing this Top Value in Stabilizers. Ask about our Special Trial Offer.
Reg. U.S. GBI Pat. Off. GENERAL BIOCHEMICALS, INC.
25 LABORATORY PARK • CHAGRIN FALLS, OHIO
A LITTLE BODY-GUARD GOES A LONG WAY

'FRIGIDRY' TRADE MARK
Reg. U.S. GBI Pat. Off.
DAIRY CULTURES
Save Time—Save Money—Avoid Trouble. Use rapid-growing 'Frigidry' cultures to produce mother culture in one generation and take guess work out of making good buttermilk, butter and cheese.
FREE Write for Booklet No. 206 on production of Cultured Dairy Products.
GENERAL BIOCHEMICALS, INC.
25 LABORATORY PARK • CHAGRIN FALLS, OHIO
LYOPHILIZED* for UNIFORMITY • VIABILITY • STABILITY
*New, high-vacuum, sub-zero drying process.

Here's the inside story...



of SAN-I-TANK milk protection for Holding...Storing...Processing

The Frigidwall San-I-Tank is a dual purpose unit that combines storage and cooling in one tank. Frigidwall saves the double handling of milk from cooler to storage tank . . . eliminates the necessity for special cooling equipment . . . conserves floor space. Milk is piped from the weigh tank directly to the Frigidwall Tank and immediately cooled. After cooling, the milk may be stored in the same tank until processing. Thick, sealed-cork insulation plus the efficient cooling unit will hold milk at the desired low temperature almost indefinitely. The entire milk content of the tank is cooled quickly and economically through the generous mixing motion of the Motor Driven Agitator. The large propeller blade of the agitator is located four inches from the tank bottom and constantly is moving the milk against the cooling jacket of the tank. Top or side entering agitator units are available. Tank capacities up to 3000 gallons.

The quality construction and advanced design of Frigidwall San-I-Tank offers many advantages to the user. Look beneath the surface and see why Frigidwall offers you more for your money.

1. STAINLESS STEEL INTERIOR of the Frigidwall San-I-Tank is polished to a No. 4 finish for complete sanitation and thorough cleaning. Tank is completely self-draining, guaranteed against rust and corrosion and is easily accessible through a large manhole door. All tank parts are removable.

2. A SPECIAL NEW, HIGH PRESSURE JACKET is welded to the tank lining providing a "flooded-surface" contact with the tank interior. The coolant flows throughout the entire jacketed area with a maximum temperature pulldown. Each cooling jacket is expertly welded and pressure tested.

3. EFFECTIVE LIFETIME INSULATION is provided by a combination of highest quality cork and glass wool. Tank is fully sealed against all moisture and will hold milk at a constant low temperature for long periods of time. Insulation is tightly packed and anchored between tank lining walls.

4. The EXTERIOR WALL of the Frigidwall Tank is made from durable heat treated carbon steel and protected with a heavy undercoating of rust-proof paint. If desired, tanks are painted to match the color scheme of your milk room. Stainless steel exteriors are available at an additional cost.

STAINLESS STEEL SAN-I-TANKS

SERVING THESE INDUSTRIES: BEVERAGE • MILK • FOOD • DRUGS • CHEMICALS • COSMETICS

METAL GLASS PRODUCTS COMPANY

GENERAL OFFICES BELDING 2, MICHIGAN

Supplee to Sponsor Broadcasts of Philadelphia Baseball Games

Quaker City Dairy Teams Up With Oil Company in Project That Will Cover Both National and American Leagues

PHILADELPHIA, PA.—Play-by-play broadcasts of American and National League baseball games played at Shibe Park here will be sponsored jointly during the coming season by Supplee-Wills-Jones Milk Company and the Atlantic Refining Company, it has been announced.

Left to right: Fred Kirk, Vice-president, Supplee; Robert R. M. Carpenter, President, Philadelpria National League Club; John K. Bainbridge, Jr., General Sales Manager, Supplee; and Roy F. Mack, Vice-president of the Athletics baseball club.

Sponsorship of the Athletics' and Phillies' games by the milk company will mark the first time the baseball broadcasts have had a local sponsor. The Atlantic Refining Company has been bringing the games to the millions in the Philadelphia area for the past thirteen years. Atlantic's co-sponsor in recent years was the Wheaties division of General Mills, Inc.

Arrangements for Supplee to team up with Atlantic were made by N. W. Ayer & Son, Inc., advertising representatives of both companies.

The baseball broadcasts mark for Supplee the largest venture in the company's 144-year history in the field of radio. In past years' the milk company, the largest in the Philadelphia area, has sponsored several local radio shows, including the Supplee Sealtest Campus Quiz, over WFIL, which went off the air last summer.

The sports broadcasts originating from WIBG, Philadelphia, will be carried over a network of stations in eastern Pennsylvania, Delaware and New Jersey with listening range reaching into some parts of Maryland.

Handling the play-by-play description of the games will be ace sportscaster Byrum Saam, who has been airing the games for Atlantic for the past ten years. He will be assisted by Chuck Thompson, with whom he worked during the 1947 baseball season.

Supplee and Atlantic will split the approximately 160 games to be played at Shibe Park during the coming season, with each sponsoring about 80 contests.

Announcement of the new co-sponsorship was made at a luncheon meeting at the Warwick Hotel attended by executives of Supplee, Atlantic and the two clubs representing both major leagues.

Those who attended included Robert R. M. Carpenter, president of the Philadelphia National League Club; Roy Mack, Earl Mack and Connie Mack, Jr., vice presidents of the Athletics; Fred Kirk, vice president, and John K. Bainbridge, Jr., general sales manager of supplee, and Joseph R. Rollins, advertising manager of Atlantic.

●

NAME WEST COAST MANAGER

C. A. Wood was recently named Manager of West Coast Operations for the Wm. J. Stange Co. Announcement of the appointment was made by president Wm. B. Durling.

Although a new comer to the Stange organization, Mr. Wood has been associated with the food processing industry for the past 20 years and is well known to canners and meat packers throughout the country.

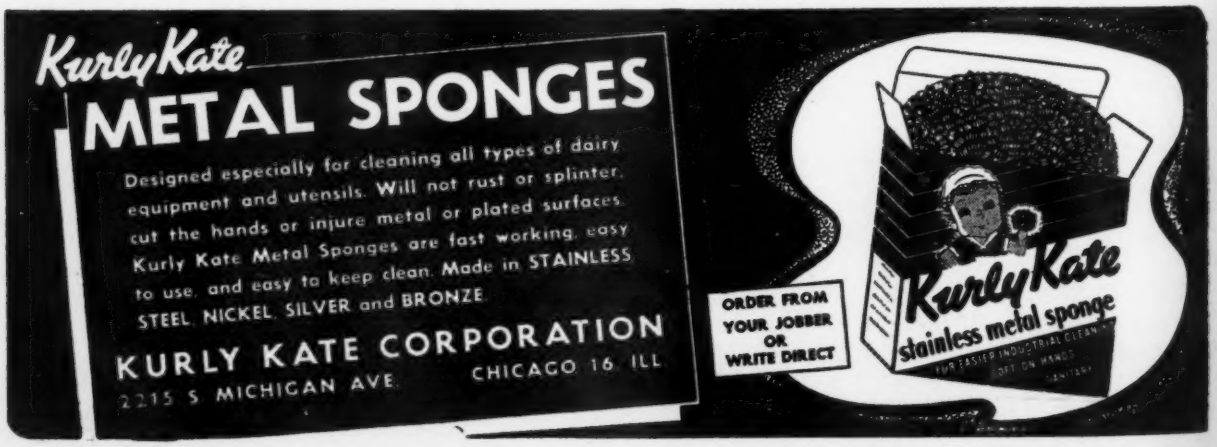
The Wm. J. Stange Co., manufacturers of C.O.S. (Cream of Spice) seasonings, Peacock Brand Certified Food Colors and N.D.G.A. Antioxidant, recently began operations in their newly acquired Oakland Branch.

●

OPEN NEW YORK OFFICE

Announcement of the opening of a New York Office to handle Atlantic District sales of Peerless Pumps is made by F. E. Fairman, Jr., Vice President of the Food Machinery Corp. and General Manager of its Peerless Division. Sales in this district were previously handled at Ardmore, Pennsylvania. The New York Office is located at 37 Wall Street.

According to B. A. Tucker, Peerless Pump Division Sales Manager, R. C. Engemoen has been appointed District Manager in New York. Engemoen, who until his appointment as District Manager was in charge of Peerless' vertical pump sales section, will supervise the sales of both the Peerless horizontal and vertical lines and other pumps of the company's manufacture.


Kurly Kate
METAL SPONGES
Designed especially for cleaning all types of dairy equipment and utensils. Will not rust or splinter, cut the hands or injure metal or plated surfaces. Kurly Kate Metal Sponges are fast working, easy to use, and easy to keep clean. Made in STAINLESS STEEL, NICKEL, SILVER and BRONZE
KURLY KATE CORPORATION
2215 S MICHIGAN AVE CHICAGO 16 ILL
ORDER FROM YOUR JOBBER OR WRITE DIRECT
Kurly Kate
stainless metal sponge

ARIZONA DAIRY SOLD

Announcement was made recently by Carl Richards, manager of the Westward Ho Dairy in Phoenix, Arizona, of the purchase, by the Westward Ho, of the Prescott Dairy, Prescott, Arizona.

The purchase was made from Quirico Rezzonico who has operated the Prescott Dairy for the past 14 years.

Acquiring the Prescott plant is but another step in the expansion program planned for the Westward Ho Dairy, established in 1946 by the late Richard Hawn, Texas oilman and hotel owner.

Bill Hawn, son of the late founder, is now owner-operator of the Westward Ho and had extended the dairy's service to Prescott from Phoenix with once a day truck delivery. Expansion of the Westward Ho's Prescott business called for extension of Prescott facilities and the Prescott Dairy purchase resulted.

Bud Ihler, native Arizonan, will manage the Prescott branch.

●

BROWN OPENS MEMPHIS OFFICE

Brown Instrument Company has opened a new district office at 922 Dermon Building, Third and Court Streets, Memphis, Tenn., it was announced last month by W. H. Steinkamp, field sales manager for the industrial division ot Minneapolis-Honeywell Regulator Company. The opening of the Memphis district office marks, said Steinkamp, the third move of a similar nature since the first of the year. Other offices have been established at Denver and Salt Lake City.

EDWARD W. CHANDLER

EDWARD W. CHANDLER who retired as president of The Creamery Package Mfg. Company in 1931, died on March 14 at Pomona, Calif., where he had resided for the last few years. Funeral services were held in Oak Park, Ill., on March 19. He left no immediate family.

Mr. Chandler was well known in the Dairy Industry where he made a host of friends during his more than thirty years of service with Creamery Package.

His first connection with CP was at the firm's Waterloo Branch of which he was made Manager in 1898. Two years later he was transferred to the Creamery Package General Offices at Chicago where he was in charge of the Cooperage Department. From 1911 to 1913 he was Secretary of the Company, after which he was made General Manager, and from 1920 to 1931 served as President.

MOTION PICTURE ON STEEL

Pittsburgh, Pa.—Use of oxygen and other modern techniques of electric furnace production of stainless steel is brought to the screen in full color in the latest motion picture to be released by Allegheny Ludlum Steel Corporation.

Titled "Melting and Refining of Modern Steels," the 16 m.m. movie was shot at the company's Brackenridge, Pa., plant and is a start-to-finish story of stainless steel as it is melted in an ultra-modern 50-ton electric furnace. During 20 minutes of sensational color and action, every high point in the melting process is covered.

Telephoto lenses are used for interior shots which make it appear that the camera is actually inside the furnace with molten metal boiling at temperatures hotter than an active volcano.

For what is believed to be the first time, the process of injecting oxygen directly into the molten metal for carbon reduction is portrayed. The onlooker has a chance to study the angry bath as the oxygen is injected. He also watches from above as the huge furnace top is lifted off, exposing the interior.

Designed for technical groups, this instructive and entertaining film may be obtained for free showings on request to the company's headquarters in Pittsburgh, Pa.

"KING ZEERO"

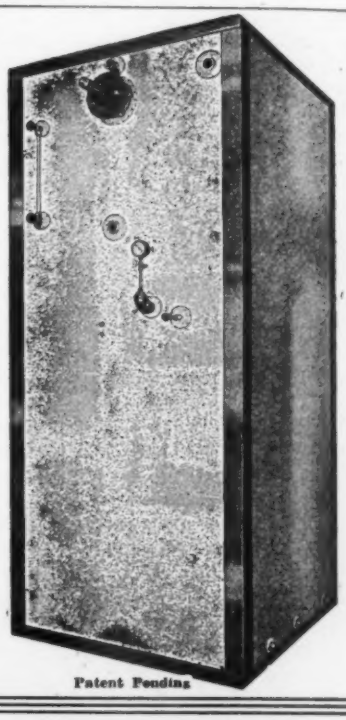
ICE BUILDER

Dependable, Low Cost Product Protection

AS CONVENIENT AS YOUR NEAREST WATER TAP

Here in one trim, compact unit is concentrated the refrigerating power of tons of ice . . . ready to give you positive product protection 24 hours a day . . . regardless of your plant capacity. In the "King Zeero," a comparatively small compressor works all the time it's running — helping cool water or producing ice for future use. Cooling capacity of compressor is multiplied many times because cooling loads are handled by a combination of melting ice and FLASH EFFECT. Temperatures lower than 32° attained by adding calcium chloride or other cooling point depressants. For unparalleled refrigerating efficiency, economy, flexibility and convenience, install the PERFORMANCE PROVED "King Zeero" Ice Builder.

Write for Bulletin No. 74



Patent Pending

THE KING ZEERO COMPANY

1447-55 Montrose Ave. ***Chicago 13, Ill.***

Perfection
IN PRODUCT
Protection

Urges Study of Formulas

American Farm Bureau Official Sees Need of Further Investigation Into Milk Pricing Systems

CHICAGO, ILL.—John R. Hanson, director of the Dairy Department of the American Farm Bureau Federation, urged further study of formulas used in calculating fluid milk markets, particularly in regulated markets. Hanson's remarks are based on recommendations of the nation-wide dairy committee which advises the Federation on dairy problems.

"Wide fluctuations have occurred recently in prices for butter and evaporated milk, as well as for fluid milk," said Mr. Hanson. "Sharp declines took place in some markets in early 1947, and in the fall season prices were generally below the corresponding period of 1946 in spite of strong consumer demand, and in the face of higher fee costs.

"In several of the larger markets, including Boston, Chicago, New York, and New Orleans," continued Mr. Hanson, "prices for fluid milk are calculated according to a formula based on market prices for cheese, butter and dry skim milk, or on prices paid to farmers by selected evaporated milk plants. Historically, there has been a close relationship between prices for fluid milk and prices for manufactured milk products, and this relationship probably should be given some weight in these times. However, it now appears that this relationship has been given undue weight in applying the price formulas, while local market forces of supply and demand have been minimized. This situation has led to widespread dissatisfaction among milk producers and their cooperative marketing organizations, and has tended to bring about decreased production of fluid milk markets.

"A recent study of the Boston market indicates that some other price factors should be considered in developing a better formula. Studies have been started in the New York and Philadelphia markets. We commend the steps already taken, and believe that studies in other market areas would help to find improved pricing methods.

"Since more than half of the total U. S. milk production is consumed as fluid milk and fluid cream, prices in the whole milk markets are tremendously important to the welfare of dairymen. It is imperative that orderly marketing and stable prices be achieved in all of these markets."

●

JOINS WISCONSIN FIRM

Roy A. Munyon of Duluth, Minn., a 3-letter (baseball, basketball, football) young man who majored in Bacteriology at college and spent 41 months of his four army years in a South Pacific Research Medical Laboratory, has joined the sales organization of Schwartz Manufacturing Co., Two Rivers, Wis., manufacturers of milk filter discs and cotton products for the dairy industry.

Mr. Munyon, formerly representing Johnson & Johnson (gauze, cotton, adhesive tape, etc.) in northern Minnesota, is now handling hardware jobbing accounts for Schwartz Perfection Milk Filter Discs and DUBL-CHEM-FACED filter in the Minneapolis-St. Paul-Duluth area.

●

BAKER ICE NAMES TWO

Two top drawer appointments were announced recently by the Baker Ice Machine Company of South Windham, Maine. Harold C. Hickcock was named Director of the The Northwest Baker Ice Machine Company of Seattle, a subsidiary of the Maine firm, and A. F. Prior was appointed Comptroller of the company.

Mr. Prior was formerly associated with the Airline Food Corp. of New York where he served as Assistant Comptroller. He is a graduate of the Pace Institute in 1923 and is a member of the National Association of Cost Accountants.

Mr. Hickock joined the parent company in August, 1947 as General Sales Manager and will continue to serve in that capacity at the company's headquarters office in South Windham, Maine.

A graduate electrical engineer, Mr. Hickock came to Baker from the Sturtevant Division of the Westinghouse Electric Corporation, where he had served as Central District Manager.

●

THATCHER GLASS REPORT

In the annual report to the stockholders on March 10 the Thatcher Glass Manufacturing Company announced a dividend of $2.40 on preferred stock and $.60 on common.

Although net sales in 1947 amounted to more than $19,000,000, the company was plagued with rising costs and, during the last half of the year, with curtailed production. The net profit per share of common stock reflected the difficulties in 1947 with a decline of $1.13 over the 1946 high.

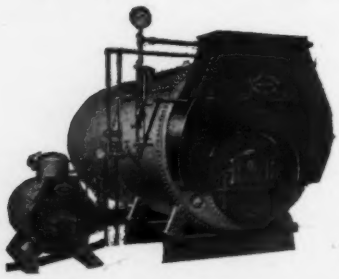
The company has made extensive investment in plant expansion and new equipment. Over a four year period in excess of seven million dollars has been turned back into the capital outlay.

●

NILS SWANSON ELECTED

McDonnell & Miller, Inc., Wrigley Building, Chicago, has announced the appointment of Nils Swanson as a Vice-President of the corporation. Mr. Swanson is widely known in the heating industry through his long association with McDonnell Boiler Water Feeders, Low Water Cut-offs and Safety Relief Valves.

LEFFEL SCOTCH MARINE BOILER



Universally accepted and used as the Ideal Boiler for MILK PLANTS where Economical Service, High Efficiencies and Lowest Maintenance Costs are required.

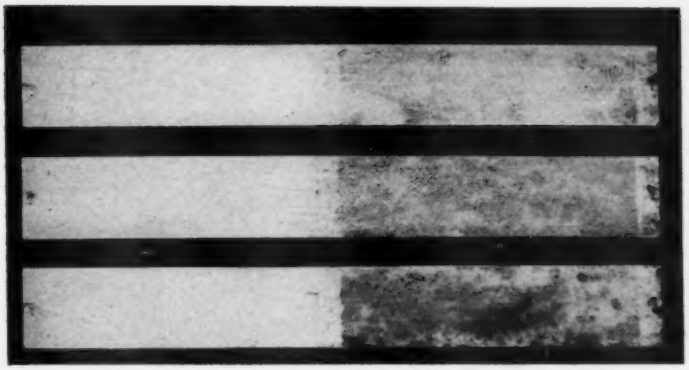
Built in sizes 6 to 250 H.P., to comply with the A.S.M.E. Boiler Code and all State Boiler Laws.

Splendidly adapted for firing with COAL (hand fire, or with the specially designed LEFFEL STOKER) OIL, GAS and WOOD.

THE JAMES LEFFEL & CO., Established 1862 Springfield, Ohio

See Additional Leffel Stoker Ad on Page 75 Dept. MR

Correction Please



In the November, 1947 issue of the *Review* we carried a story entitled Paint, Champion of Quality. The excellent pictures were furnished by the New Jersey Zinc Company. One picture showing the effect of mold on various kinds of paint was inadvertently presented the wrong way around. We take this opportunity to show the picture in its proper position and repeat the story that it tells.

These panels were exposed 189 days in a mold cabinet. The three different paints on the right half contain no zinc oxide; they are discolored by the fungus. The same paints fortified with zinc oxide are on the left half; they have successfully combatted mold growth.

What ingredients are used in a paint of this type to obtain a balanced combination which will fulfill the above requirements? Well, its radiant whiteness and high hiding are contributed by zinc sulfide or titanium dioxide. Zinc oxide is used to deter mold growth through its unique fungistatic action. Also, it maintains whiteness by overcoming the tendency of oleoresinous paint vehicles to yellow gradually in interior service—as was described in detail in the last issue of Paint Progress. The long-lasting, gloss finish with unusual scrub-resistance is contributed by the special vehicle, based on the most suitable synthetic resins for this type of service.

TO DIRECT QUALITY CONTROL
R. C. Cross to Head Intensified Program for Kraft Foods Company

Roger C. Cross has been made director of quality control for the Kraft Foods Company after 20 years of outstanding service to the company in that department. He will be assisted by quality control managers in each division plus a group of commodity chiefs, who will work at Chicago headquarters in setting up standards for various products.

Emphasizing that quality control is not at all new with Kraft but is being greatly intensified; Cross said division quality control managers would be responsible for execution and enforcement of all such functions within their divisions, including both manufactured goods and raw materials.

Already appointed to these posts are Willard Day, New York, eastern; Charles Swearingen, Denison, Tex., southwest; Burt Horrall, Chicago, midwest; A. B. (Gus) Smith, Green Bay, Kraft of Wisconsin; Julian Sipiora, Minneapolis, northern; and Thomas Cooper, Outremont, Quebec, for Kraft Ltd., in Canada. W. N. Stronach, southeast production manager, will also head quality control for the time being. No western division appointee has been selected. These men select their own assistants.

MARLEY "Packaged Unit" TOWERS

For limited capacity service Marley Aquatowers and Series 100 Atmospheric Towers have earned highest rating in hundreds of installations the country over.

AQUATOWERS for Indoor and Outdoor Installation.

This complete unit may be installed by making just three connections. The Aquatower is available with or without pump, and is offered in size range for three to fifteen tons of refrigeration.

Series 100 Atmospheric Towers for Outdoor Installation.

Designed for maximum economy of installation and operation, these towers are prefabricated for ease of erection. Quality materials assure years of uninterrupted service.

Marley Way . . . the Perfect Spray

Marley Patented Spray Nozzles for cooling towers, processing and air washing provide maximum distribution at lowest pressure. Absolute minimum of maintenance is necessary.

MARLEY COOLING TOWERS

THE MARLEY COMPANY, INC. • KANSAS CITY 15, KANSAS

Challenge Opens New Plant

California Organization Holds Dedication Ceremonies for Splendid Modern Structure Located in Berkeley

THE CHALLENGE CREAM & BUTTER ASSOCIATION, a federation of twenty-nine individual cooperative creameries representing over 30,000 small dairy farmer members, has just completed the nation's most modern milk and dairy foods processing plant in Berkeley, California. Formal dedication ceremonies will be conducted at the plant at 4th and Addison Streets, Berkeley, on Sunday, February 29.

Replacing the old Oakland plant of Challenge, which was necessarily abandoned due to the increase of business volume, Challenge-Berkeley has been planned and built to incorporate every modern and scientific device for the safer and more sanitary handling of milk and milk products.

Modern In Every Way

Challenge-Berkeley, containing 45,000 square feet of floor space in the main building, will have a daily capacity of twenty-three hundred gallons of milk per hour. This, however, is only a starting capacity as provision has been made for volumes far beyond the present figure. The new plant is one of gleaming tile, burnished stainless steel, and sunlit rooms The entire plant is modern in every detail to the extent of being a real "push-button" operation. The entire plant and its operation is entirely automatic.

Alben R. Froberg, architect designer of the plant, devised a two-story filler room with a large glass skylight overhead. From the large glass viewing ports on the second floor visitors are able to view almost the entire operations of the bottling and processing. Handling of all products is expedited by an extensive conveyor system which runs throughout the plant. Large refrigerated rooms with varying temperatures are strategically located throughout the plant for the most efficient handling of these perishable commodities.

Other Buildings Erected

Two other buildings have been erected on the full block, 246 foot by 482 foot lot. There is a 50 foot by 110 foot power house which also contains compressors for the refrigeration system in the main building. A 50 foot by 93 foot garage will be used for maintenance and repair of the plant's vehicles.

Within a year, Berkeley manager A. E. Everson stated, Challenge expects to add a $100,000 ice cream manufacturing plant on one corner of this property. Distribution from this new plant will follow the same marketing policy as was used at the Oakland plant. Challenge will sell only to grocers, marketing operators, restaurants, institutions and other wholesale buyers in the area. Challenge-Berkeley will commence operations with thirty wholesale routes servicing 1,400 outlets.

The Challenge federation of cooperative creameries consists of approximately sixty creameries, owned and operated by twenty-nine individual producer cooperatives, covering producing areas in seven western states. The organization was conceived and commenced its modest operations in Tulare, California in 1910. From that small beginning the Challenge cooperative has grown until now it has fourteen sales outlets similar to Challenge-Berkeley in operation in the major cities of California. It it expected that total volume of business for the year 1947 will top $70,000,000.

Being a true cooperative organization, the Challenge Cream & Butter Association is owned and operated in its entirety by the small, independent dairy farmers who actually milk the cows. At the present time, there are over 30,000 dairymen, who are the actual owners of Challenge. All benefits accruing through the sale and distribution of Challenge dairy foods are returned to these dairy-farmer owners, less only the actual and fractional costs of selling their merchandise. The Challenge is strictly a non-profit sales organization, truly the farmers own business.

●

Feature of the Recent Cal Poly Events

Following the recent awarding of an honorary membership in the California State Polytechnic College Los Lecheros dairy club to Sam Greene (center), Greene presented to C. O. McCorkle, (right) assistant to the president of the college, a copy of an 1829 edition of a book describing milk handling in Scotland in the 1812-16 period. Looking on is George Drumm, left, head of the Cal Poly dairy department.

USE OUR MICRO CRYSTALLINE WAX TO SOLVE YOUR MILK PACKAGING PROBLEMS

It has been proven that MICRO CRYSTALLINE WAX, added to your other waxes - - -

- **IMPROVES ADHESION**
- **PREVENTS FLAKING**
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- **EXTENDS OTHER WAXES**

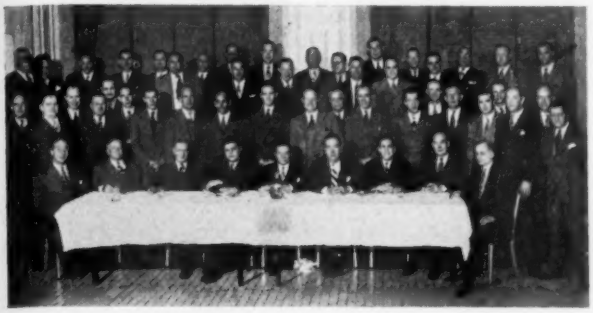
Write today for Samples and Literature

BOLER PETROLEUM COMPANY

Widener Building **1928 — 1948** **Philadelphia 7, Pa.**

Indianapolis Meeting

A meeting of the entire Bessire and Company sales organization was held recently in Indianapolis. Personnel attending the meeting included salesmen, servicemen, and executives



from the firm's offices in Louisville, Memphis, Columbus, Richmond, and Indianapolis.

Manufacturers' representatives included those from C. H. Dutton Company DeLaval Separator Company, Chester Dairy Supply Company, the Paperlynen Company, Rice & Adams Corporation, Pfaudler Company, Manton Gaulin Manufacturing Company, Bristol Company, Waukesha Foundry Company, Langsenkamp-Wheeler Co., Tri-Clover Machine Company, The Heil Company, Ft. Wayne Dairy Equipment Company, Emery Thompson Machine & Supply Company, Anderson Bros., Schlueter Company, General Dairy Equipment Co., Read Machinery Division, Pillsbury Mills, Inc., Union Steel Products Company, Columbus Show Case Company, Dow Corning Corporation, Harvey Paper Products Company, Anetsberger Bros., Inc., National Starch Products Company, Hershey Chocolate Corporation, Ekco Products Co., Lockwood Manufacturing Co., Chicago Metallic Mfg. Co., and the Middleby-Marshall Oven Company.

The Bessiere Company is a dairy and bakery supply and equipment organization.

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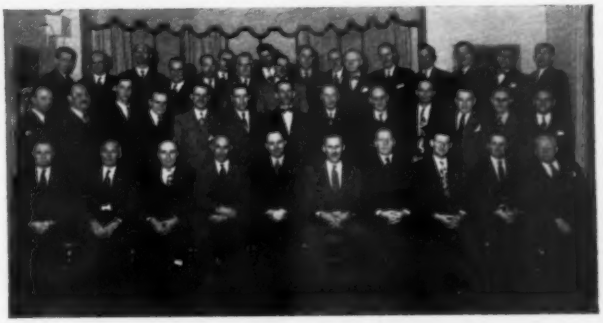
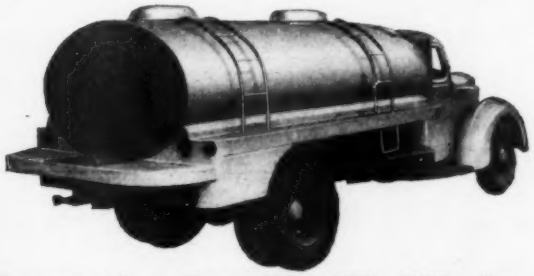
Cherry-Burrell Conference



During January Eastern Branch managers and supply merchandisers of the Cherry-Burrell Corporation met with General Office heads of the Merchandising Division for a three day conference. Picture shows many familiar faces in the large group attending the conference.

SANI Certified DAIRY Equipment

Sani-Certified Truck Tank



For any truck frame. Capacities from 750 to 2000 gallons. Elliptical construction gives low, road-safe center of gravity. Conforms throughout to sanitary requirements. Inner jacket of stainless steel, 2" cork insulation. Send for Bulletin 821A.

For the specialized equipment every dairyman needs, consult our Engineering Department. Draw on our years of experience in solving equipment problems for the dairy industry. We design equipment exactly suited to your plant and your production. Advisory service is free. Write and tell us what you need.

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DR. ROBERT F. HOLLAND

Problems of the Industry

DR. JAMES C. WHITE

Dr. Robert F. Holland and Dr. James C. White, both of the Department of Dairy Industry at Cornell University, conduct their question and answer column each month in the "Review". Questions should be addressed to either Dr. White or Dr. Holland, Department of Dairy Industry, Stocking Hall, Cornell University, Ithaca, N. Y.

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Weigh Vat Fat Test Variation

QUESTION—About 8 months ago we installed new receiving room equipment, including weigh vat and receiving tank. Since that time we have had trouble making our fat receipts and sales balance. In fact, we have been running about 4% fat loss per month. What can we do to eliminate this trouble? Our weigh tank is one of the latest stream-lined models.

L. M., New York.

ANSWER—There is a good possibility that this "stream-lined" weigh tank you mention may be the cause of your fat loss troubles. Of course, you can never expect to attain the ideal situation in which your fat sales equal your fat purchases. Most plants expect a loss of from ½ to 1½ per cent and in New York State the Federal Milk Market Administrator permits fluid milk plants a maximum fat loss of 2 per cent. If you are experiencing a loss in excess of this, you should make a complete study of your operations and the weigh tank is a good starting place.

The milk arriving at your plant has been in the cans for varying lengths of time and the night's milk in particular has been cooled and has had ample opportunity to form a heavy cream layer. When this is dumped into the weigh vat, the turbulence created by the falling liquid tends to mix the cream into the milk. Each successive can dumped magnifies this mixing *if the weigh can* is *deep* and *nearly square*. If, however, the tank is long and narrow, the first can flows to the end of the tank and the second one flows after it with little tendency to cause turbulence and mixing, but actually the tendency is to form layers of milk of varying fat tests. Since most operators dump the night's milk first, these layers will tend to be more or less the same from day to day and the fat test of the sample you withdraw for the composite will depend on the location of the sampling hole.

The following data taken from the Proceedings of the International Association of Milk Dealers, Laboratory Section, 1933, p.84-85, illustrates the differences obtained by

WEIGH VAT FAT TEST VARIATIONS

(All data presented in the following table were obtained at the same plant during April 1932 and 1933)

	Shape of weigh vat							
	Long and shallow				Square			
	Location from which sample was taken			Maximum	Location from which sample was taken			Maximum
Patron	Dump	Middle	Gate	variation	Dump	Middle	Gate	variation
	%	%	%	%	%	%	%	%
4	4.25	4.90	4.30	0.65	4.90	4.60	4.60	0.30
	3.75	4.50	5.75	2.00	4.70	4.40	5.00	0.60
12	4.10	4.15	4.70	0.60	4.85	4.20	5.20	1.00
	3.80	3.80	4.60	0.80	4.20	4.30	4.90	0.70
204	5.25	4.75	5.20	0.50	4.20	5.20	5.15	1.00
	5.15	5.25	4.10	1.05	4.30	4.70	4.70	0.40
695	4.20	4.85	4.05	0.80	4.90	4.15	4.30	0.75
	3.80	4.25	5.05	1.25	4.70	4.55	4.20	0.50

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MILK
FRESH CREAM
FROZEN CREAM
SOUR CREAM
COTTAGE CHEESE
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POT CHEESE
BUTTER
BUTTERMILK
DRIED SKIM MILK SOLIDS
SWEENTENED SKIM CONDENSED MILK
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PLAIN SKIM CONDENSED MILK

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PLANTS AT:

Arkport, New York — Bear Lake, Pennsylvania — Cohocton, New York — Neenah, Wisconsin

sampling at various points in both long and square weigh tanks. Note that the differences are less in the square tank.

I suggest that you try sampling at various points in your own weigh tank. If you find wide variations a motor-driven agitator may solve the problem. Use a flat blade on the agitator shaft, not an impellor as this would affect your weights.

This is a starting point in solving your problem. It will probably be advisable to trace the flow of materials through the entire plant, however, not neglecting the checking of finished goods in and out of your coolers.

●

Increasing the Viscosity of Market Cream

QUESTION—We are separating about fifty cans of milk a day in the flush. We pasteurize and separate immediately at about 120° F. We run the cream into cans and put it in ice water to cool. We have had few complaints but sometimes our cream does not appear to our customers as rich as that of our competitors, although the fat test is the same. How can we get a heavier body in our cream? We would rather not put more fat in it. We would be grateful if you can give us some help.

J. W. S., Ohio.

ANSWER—There are two ways you can treat your problem.

The first thing we would suggest is that you cool the pasteurized milk to a temperature of 70° to 75°F. before separating. The cream which is separated from this colder milk will be richer in fat than that from warmer milk unless the separator is adjusted for the lower temperature. The cream will have a high viscosity even though the separator is set to produce cream of the same fat content as before.

Another method which has been used successfully is to cool the pasteurized milk to at least 50°F. or below and hold that milk at that temperature for two or more hours. The milk is then warmed to 80-84°F. and separated. The milk separated at 80° will give a heavier body than the milk separated at a higher temperature. In other words, if the body of the cream is too heavy when separating your particular milk at 80°F., increase the separating temperature by one or more degrees, depending upon how heavy you want the cream. The fat content should, of course, be the same as that which you are now selling.

If there is sufficient storage space in your refrigerator, or you have a tank which will maintain uniform temperature and hold all the milk that you want to separate, there is no harm in holding the milk cold overnight and separating the following day. Keeping milk cold before separation will produce a much heavier body than can be obtained by cooling pasteurized milk to 65° or 70° and separating immediately. It is true that with some of the older separators there will be an increased fat loss when separating at this lower temperature. This loss in fat should not be over 0.05 per cent. The newer separators will give increased fat loss but only in the neighborhood of 0.01 to 0.02 per cent.

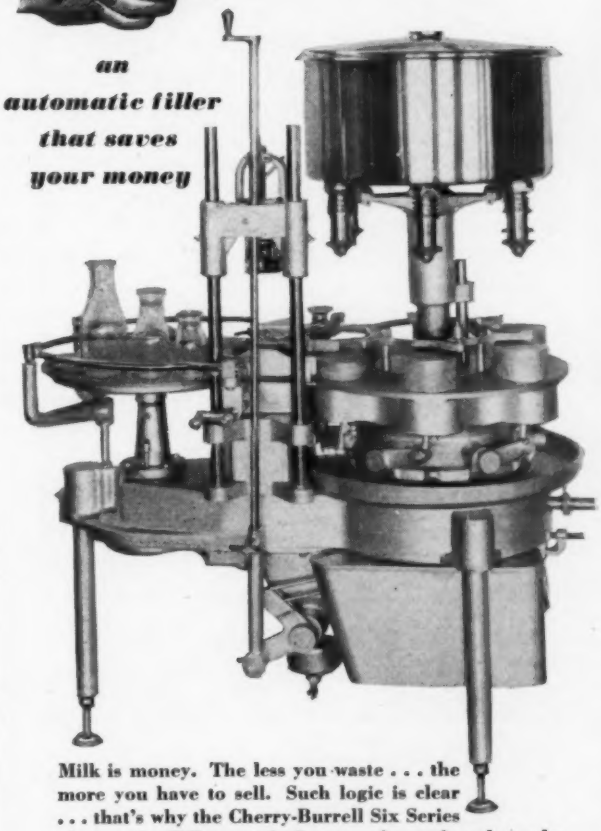
The main objection to handling the pasteurized milk as suggested is that storage space for the amount of milk you are handling may be insufficient. You may want to try holding only a few cans in this manner until you determine whether or not you desire to go to the additional trouble of producing cream by this method.

Either of these methods should result in a substantial increase in the viscosity of your cream, but the latter method will give much greater improvement than the former. One of these methods should answer your problem.

If we can be of any further service, please contact us through the *American Milk Review*.

here's a Bonus for smart dairymen!

an automatic filler that saves your money



Milk is money. The less you waste . . . the more you have to sell. Such logic is clear . . . that's why the Cherry-Burrell Six Series *Automatic* Fillers and Cappers have found ready acceptance with small dairies for years.

A "Six Series" Filler gives you a bonus by saving one quart for every 200 bottles filled. Automatic filling of each bottle to a pre-determined level cuts losses . . . saves dollars. Many dairymen like the speed and versatility of the "Six Series" because they can fill 16 two-quart bottles, 20 quarts, 32 pints, or half pints a minute. Each "Six Series" Filler has the famous Cherry-Burrell Uniform Filling Valve. They all give you easy-to-clean sanitation *plus* durability and faithful operation.

For higher output and all-around utility, write today for catalog on the "Six Series" milk saver.

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FACTORIES, WAREHOUSES, BRANCHES, OFFICES OR DISTRIBUTORS AT YOUR SERVICE IN 56 CITIES

trendmaker in a great industry

You are charged with having sold in Inter-State Commerce in violation of the Food and Drug Law, Butter, containing less than the legal amount of Fat. (Notice of Judgment, F. & D. Admin.)

Your Fine Is Fixed at $3,000.00.

THOSE WORDS BROUGHT RUIN TO THE HONEST EFFORTS OF A LIFETIME.

Could this happen to you? Your Producers have the answer. So long as cows have mastitis, Frequent Use of the Brom Thymol Test is essential to the safety of your Product, and your business.

Milk from ANY cow having Mastitis is deficient in Butter Fat. Being a Food, and the product of a "Diseased Animal," it's Adulterated. There is no way it can be made marketable. Whether in its fluid state, or, as processed into Butter, Cheese, Ice Cream, etc., its sale is a violation of the Food and Drug Law.

The old fashioned strip cup is NOT a dependable test for Mastitis. If EVERY COW producing Milk for you is FREQUENTLY TESTED with those dependable, inexpensive, accuracy guaranteed —

KO-EX-7 Brom Thymol Mastitis DETECTORS

you'll have little need to worry about Mastitis Milk. Simply supply them to your Producers and INSIST ON THEIR USE. That's the road to safety. For FREE SAMPLES write —

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National Dairy Report

Record High for Seventh Consecutive Year Revealed in Annual Statement to Organization's Stockholders

CLIMBING TO A NEW record high for the seventh consecutive year, National Dairy Products Corporation's dollar sales in 1947 reached a total of $897,324,000, up $154,915,000 from the previous year, L. A. Van Bomel, president, reported in the annual statement distributed to stockholders.

The company's earnings in 1947 were $3.68 a share, compared with $4.05 a share, after provision for possible future inventory price declines, in 1946. This represents a profit of 2.6 cents on each dollar of sales in 1947. Dividend payments during the year totalled $1.80 a share, compared with $1.65 a share in 1946.

Financial Position Strong

The financial position of the company continues strong, Mr. Van Bomel told stockholders. Working capital at the end of the year was $90,228,000, with current assets of $153,244,000 against current liabilities of $63,016,000. Funded debt reached a 17-year low of $49,000,000.

Cash and United States Government securities totalled $30,614,000, an increase of $3,752,000 over 1946. Reserves for possible future inventory price declines and other contingencies, provided in recent years and totalling $15,000,000, remined unchanged. Inventories at the end of the year were $86,168,000, compared with $86,766,000 in 1946.

"The lower earnings realized in 1947 were due to greatly increased costs and our resistance to consumer price increases," Mr. Van Bomel stated. "We held the price line as long as it was possible to do so. The cost of procuring, processing, packaging and delivering our products advanced $157,615,000, however, while sales increased only $154,915,000. This made it necessary to increase prices.

"We deplore the consumer price increases which were necessary to establish a more realistic relationship between income and costs. The forces which increase costs, and consequently drive prices up, however, are beyond the control of any individual company.

Expenditures for milk and other raw materials purchased from suppliers amounted to $571,702,000, an increase of $122,982,000 over 1946. Payroll for 44,785 employees totalled $141,372,000, compared with $122,408,000 paid to 41,799 employees the previous year.

Packaging costs amounted to $42,373,000, compared with $32,549,000 in 1946; direct tax expense was $21,963,000, compared with $26,723,000 the previous year; repairs and maintenance totalled $19,286,000, compared with $16,757,000 in 1946; and depreciation amounted to $10,636,000, compared with $8,822,000 in 1946.

Consumer demand for the company's products is expected to continue at a high level this year, Mr. Van Bomel said, pointing to high employment at good wages, the marked increase in the population and broader public understanding of nutritional values as favorable factors.

To increase the company's capacity to serve its expanding markets, $32,000,000 was spent in 1947 for replacements and additions to property, plant and equipment, making a total expenditure in 1946 and 1947 of $54,500,000 for this purpose. Development of new products to further diversify the company's business will be speeded during the present year, when the

new National Dairy Research Laboratories at Oakdale, Long Island, will be ready for full operation.

During 1947, the company also continued to co-operate closely with farm organizations in a program to increase efficient milk production on the farm, and this work will be further expanded in 1948.

European properties in Germany, Holland, and England survived the war with practically no damage, and are all in operation again, Mr. Van Bomel reported, although the only profits from foreign operations reflected in the company's financial statements are dividends from the English and Canadian business.

Meanwhile, the company, having decided to discontinue the manufacture of casein fibre, has disposed of its Aralac properties. Development of other, more profitable, uses for skim milk products has resulted in a marked increase in the cost of casein, and it was accordingly deemed advisable to sell the Aralac plant and employ the capital in other divisions of the business. The entire casein fibre operation resulted in a profit to the company, the report states.

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WORLD FOOD CONTROL

(Continued from Page 56)

other scarce foods, the critical cereals shortage continues through 1947-48. Increased supplies have relieved the food shortage somewhat and permitted a higher per capita consumption, however, in several areas formerly short of cereals, especially the U.S.S.R. and China.

The world coarse grain output in 1947 was about 7 percent less than in 1946 and slightly below prewar. Feed supplies, sharply reduced by drought in 1947, have been unusually short, and resulting livestock liquidation temporarily increased world meat supplies in the fall of 1947. There is prospect, however, of a substantial reduction in meat production in 1948.

Potatoes are the only major food crop whose world production declined in 1937 compared with 1946. The drop occurred chiefly in Europe.

Coming Year Looks Better

The outlook for world food production in 1948-49 is characterized by generally favorable conditions for winter crops in the Northern Hemisphere, increased planted or intended acreage of food crops in 1948, and larger supplies of fertilizers. Supplies of new farm equipment have been increasing slowly, but in many countries are insufficient to replace equipment forced out of use because of a shortage of parts.

Further increases in production of cereals, rice, fats and oils, sugar and feeds are likely if favorable weather conditions continue and acreage intentions for 1948 are carried out. However, supplies of these products on a per capita basis would still be below prewar and would permit only a moderate relaxation of the present stringent levels of consumption in the deficit producing countries. Moreover, there is a need in all countries for an increase in reserve stocks of food in order to improve distribution and maintain established rations.

Obstacles to expanding world food production and distribution include the world-wide shortage of industrial goods, inflation in war-torn countries, and a shortage of foreign exchange, especially of dollars, in many of the deficit countries.

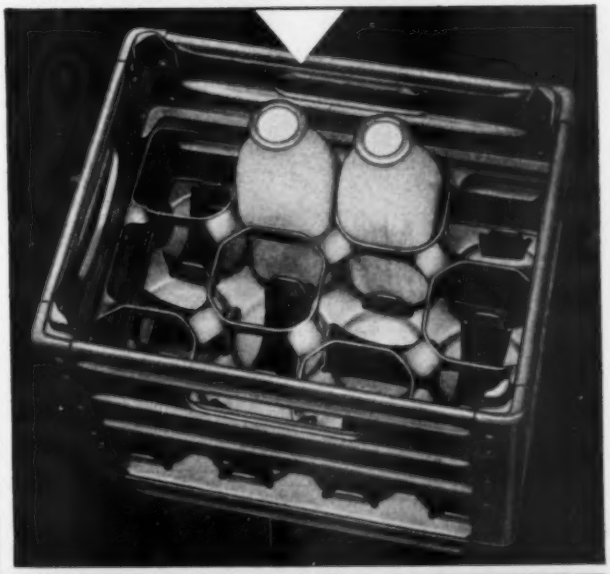
Have You Seen The Want Ads?

FEATURING
THE NEW REDESIGNED
"Easy Rest"
BOTTOM

Since a good picture is worth a thousand words, we refer you to the photo cut below. Note how bottom sections are shaped to that of the bottle; how throughout the case, in flanges, center divider and bottom, every form is planned for bottle protection. No amount of jarring or tilting will change the position of the bottles. It's a smooth, positive divider bottom. Reduces breakage to practically zero. No wear on the bottle.

SAVES

IN BOTTLE BREAKAGE



C. E. ERICKSON CO., Inc.
DES MOINES 7, IOWA

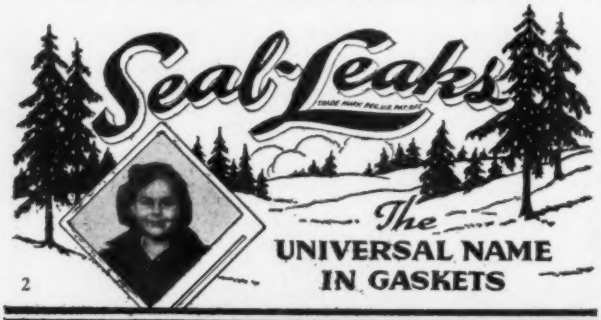
A Prime Favorite . . .

WITH canny consumers and Jobbers the country over — that's becoming daily more true about *Seal Leaks — the Universal name in Gaskets.*

It's a ten-to-one chance your own Jobber stocks them. And he does so because, in the scores of up-to-the-minute milk plants he serves, *Seal-Leaks* are already the first choice. They have "made good" with closure-wise operators everywhere — they have conclusively proven their quality leadership! ★ ★

Yes, a size and shape for every milk-joint in your entire plant. Always a perfect fit. **Neostyle** unit-containers that make them easy to buy, to store and to use.

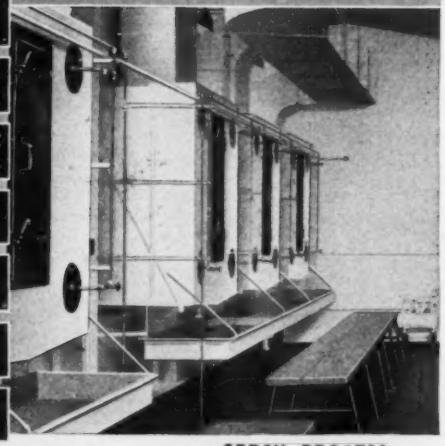
Ask your Jobber for SEAL-LEAKS by Name.



BEAVERITE PRODUCTS, INC.
Beaver Falls, New York, U·S·A·

Multiple Products Mean Multiple Profits

NON-FAT DRY MILK SOLIDS
WHOLE MILK POWDER
MODIFIED MILK INFANT FOODS
ICE CREAM MIX
SOYA BEAN DERIVATIVES
MALT
POWDERED EGGS
PROTEIN HYDROLYSATES



Rogers SPRAY PROCESS MILK DRYING PLANTS

The multi-purpose uses of Rogers Spray Process Milk Drying Plants have soundly broadened the profit opportunities of America's dairy industries. Rogers equipment makes diversification easy and profitable and permits coordination of production to meet most attractive market demands. More and more dividend-minded dairy plants are building sales the profit-proved Rogers way . . . with Rogers Spray Process Milk Drying Equipment or Rogers Vacuum Pans. Let us explain why it will pay YOU to diversify.

Since 1883 "The Choice of Dairyland"

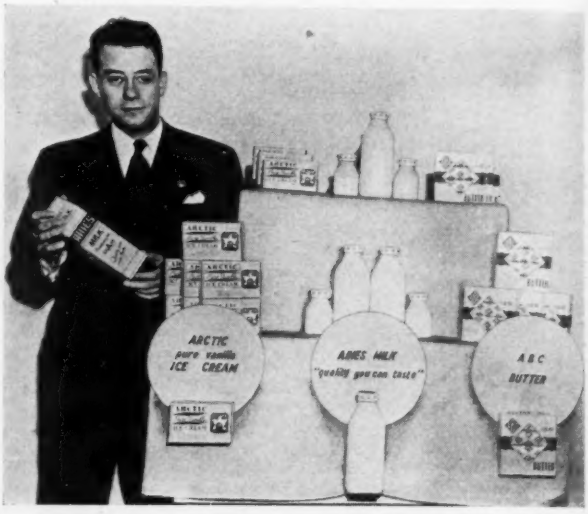
C. E. ROGERS COMPANY, 8731 WITT ST., DETROIT 9, MICH.

Will Sponsor Radio Show

Kansas City Firms Purchase Popular Midwest Newscast Spot — Program Has Large Rural and Urban Audience

IN ONE OF KANSAS CITY'S most important radio program purchases of the year, the KMBC Sunday News with John Farmer was bought for Arctic Ice Cream, Aines Milk and ABC Foil-Wrapped Butter.

Negotiations were consummated by Walter F. Labhart, vice-president of American Dairies, and Sam H. Bennett,



Display of products of the Arctic Ice Cream Company, Aines Milk Company, and ABC Foil-Wrapped Butter. These products will be advertised over a Sunday News radio program featuring John Farmer.

KMBC vice-president and director of sales. KMBC is the CBS outlet for the Heart of America.

The schedule promotes each of the three products on all six Farmer's Sunday newscasts. They are at 7:15 and 9:45 A.M., at Noon, 6, 9:30 and 11:00 P.M.

The KMBC Sunday News is a popular midwest feature. It is heard by thousands of urban and rural families.

Farmer, who saw active service in the war, is a life-long Missouri newsman. He is a graduate of the Kansas University School of Journalism.

The companies whose products Farmer will advertise are recognized as leaders in their fields. Arctic Dairy Products, makers of Arctic Ice Cream, is one of the oldest businesses of its kind in Kansas City. This company has put the terms "Arctic Pure Vanilla Ice Cream" and "At Better Dealers" on the tongues of housewives throughout Kansas City and the surrounding areas.

Aines Farm Dairy, home of Aines Mello-"D"-Milk, has been one of Kansas City's leading dairies for over 30 years. The new Aines plant is one of the most modern milk plants in the middlewest. The new plant, often called "The Dairy of Tomorrow", insures the people of Kansas City a safe milk supply. From the time the milk leaves the farm until it is delivered to the housewife it is encased in either glass or stainless steel.

ABC Butter has been a Kansas City favorite for years. Made in Kansas City by American Dairies, ABC Foil-Wrapped Butter reaches the homes of Kansas Citians churn-fresh. On

July 14 ABC Butter introduced an aluminum foil wrapper making Kansas City the second city in the United States with this new protective wrapper.

Farmer's programs will advertise these three products as the Three A's of better dairy products, Arctic, Aines and ABC.

•

Dairy Council Formed

South Dakota Handlers and Producers Set Up New Organization—Ten Men Named to Committee

THE SOUTH DAKOTA STATE DAIRY ASSOCIATION in a meeting with producer groups on February 13, unanimously voted to set up a dairy council in South Dakota. The action came as a result of interest expressed in such a council at the Association's annual meeting last December. Producer groups involved were the Brown Swiss Cattle Breeder's Association, Guernsey Breeders Association, Holstein-Friesian Breeders Association, South Dakota Cooperative Breeders Association, and the Sioux Valley Milk Producers Association.

It was understood that the Council should not supplant existing organization but should be a committee composed of representatives of dairy organizations to act in an advisory capacity to their memberships. It was felt that such a committee could be "the voice of the dairy industry in South Dakota.

Then dairymen from the State were named to the Council. These men were:

E. P. Shafer—Route No. 2, Sioux Falls, S. D., Milk Producers, Association.

Thad Oviatt—Huron S. D., Holstein-Friesian Association.

M. A. Sween—Mentor Farms, Volga, S. D., Guernsey Breeders Association.

A. M. Helgaas—Farmers Coop. Creamery, Madison S. D.

I. J. Bibby—Brookings Creamery, Brookings, S. D.

Clive Scholley—Castlewood, S. D., South Dakota Coop. Breeders Association.

Kenneth Balo—White, S. D., Brown Swiss Breeders Association.

A. M. Stumley—Farmers Coop., Creamery, Volga, S. D.

A. L. Thelin, Route No. 4, Sioux Falls, S. D.

O. H. Barnett, Fairmont Creamery Co., Rapid City, S. D.

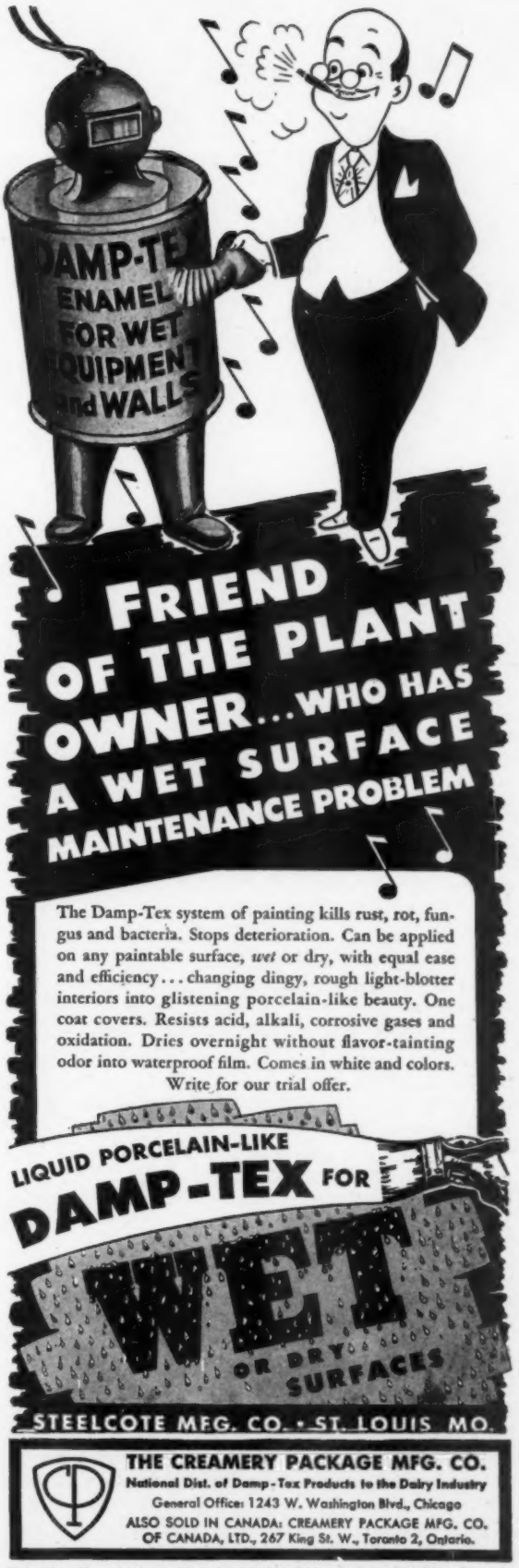
The entire board of the State Dairy Association was appointed to the Council in order to give the processing industry an equal representation with producers.

Officers elected for the Council were: Thad Oviatt, Huron, President; I. J. Bibby, Brookings, Vice President; D. L. R. Hansen, Brookings, Secretary. The Secretary is not a member of the Council.

Several resolutions were passed by the Council which deal with problems of immediate concern. The State Board of Agriculture to increase the premiums on dairy cattle at State Fair. In the past, premiums on dairy cattle have been substantially lower than those on beef cattle, and it was the Council's aim to have these premiums increased.

Senators and Congressmen were urged to lead a vigilant fight against the repeal of the Federal 10c per pound tax on Colored Oleo. This resolution and a letter were forwarded to the state's delegation in Washington and to Rep. Hope, chairman of the House Agriculture Committee.

A third resolution endorsed the 30-day ADA collection and urged that all cream and milk buyers to make the penny per pound collections in June.


DAMP-TEX
ENAMEL
FOR WET
EQUIPMENT
and WALLS
FRIEND
OF THE PLANT
OWNER... WHO HAS
A WET SURFACE
MAINTENANCE PROBLEM
The Damp-Tex system of painting kills rust, rot, fungus and bacteria. Stops deterioration. Can be applied on any paintable surface, wet or dry, with equal ease and efficiency... changing dingy, rough light-blotter interiors into glistening porcelain-like beauty. One coat covers. Resists acid, alkali, corrosive gases and oxidation. Dries overnight without flavor-tainting odor into waterproof film. Comes in white and colors.
Write for our trial offer.
LIQUID PORCELAIN-LIKE
DAMP-TEX FOR
WET
OR DRY
SURFACES
STEELCOTE MFG. CO. • ST. LOUIS MO.
THE CREAMERY PACKAGE MFG. CO.
National Dist. of Damp-Tex Products to the Dairy Industry
General Office: 1243 W. Washington Blvd., Chicago
ALSO SOLD IN CANADA: CREAMERY PACKAGE MFG. CO. OF CANADA, LTD., 267 King St. W., Toronto 2, Ontario.
Canadian Manufacturer: Standard Paint & Varnish Co., Windsor, Canada

JUNE DAIRY MONTH

June is Dairy Month
ICE CREAM KIT (6 pieces)
Promoting Sale of Ice Cream and Its Use in the Home
The Happy Ending ICE CREAM
CHEESE KIT (5 pieces)
BUTTER KIT (5 pieces)
Promoting Increased Use of Butter
BUTTER Completes YOUR MEAL
BUTTER
MILK KIT (7 pieces)
Promoting Sale of Milk, Cottage Cheese and Buttermilk
MILK your biggest FOOD BARGAIN
HEADQUARTERS: NATIONAL DAIRY COUNCIL • 111 N. CANAL STREET, CHICAGO 6, ILL.

"DAIRY FOODS – Your Best Buy." With that economy slogan the Dairy Month promotion program for 1948 observance is moving into high speed under aggressive direction of its operating officials.

The program includes 11 distinctive and new pieces of sales materials, the art work for which was done by a nationally known studio. All are reproduced in full color.

And those materials are now ready for distribution through the National Dairy Council, 111 North Canal Street, Chicago 6, which, for the 12th consecutive year, is serving as Dairy Month Headquarters.

"The economy appeal of this year's campaign will mean much to the entire dairy industry," declares Neal D. Kelley, who again is serving as national promotion chairman for June Dairy Month.

"We of the dairy industry must never forget that we are daily competing against the inroads of other food groups, who are spending something like 40 million dollars for education, 24 million for research and 100 million for advertising yearly to promote their own sales against ours.

"But in this inflated market, milk and dairy products are the best buy for the housewife—that is our theme song, and it's a proven scientific and nutrition fact with which we are bombarding consumers this year.

"The economy story emphasized to housewives will make 1948 a banner year for dairy foods, if we take advantage of our opportunity."

The 1948 sales materials were actually produced two months ahead of ordinary schedule, in order to get them earlier into the hands of those who will use them in consumer outlets. As a matter of fact, the careful planning of the whole program for Dairy Month in 1948 began early in the fall of 1947, under the direction of the national program chairman, President Milton Hult of NDC.

"We are gratified," says Mr. Kelley, "at the keen sales interest already being shown in the promotion program this year.

"As usual, all these Dairy Month sales materials are produced on a cost basis, and are available now to anyone who can and will use them.

"But we need the interest and active support of every segment of the dairy industry if we are to get those materials distributed and used where they will do the most good—in consumer outlets, where cash registers will ring in response to our theme song of economy."

Purchase orders for the kits may be sent direct to Chicago Headquarters, and materials will be expedited to purchasers in order to give them the greatest amount of time possible for planning and scheduling in consumer displays that will really sell.

"We feel," Mr. Kelley adds, "that the very attractiveness of the sales materials this year (all are in four-color reproduction and are designed carefully to fit merchandising needs) will be a great stimulus to buying. And if we get the consumers using dairy products and realizing that dairy foods are the best nutrition buy on the market, it won't be long before we'll have a healthier and happier nation, not to mention a more prosperous dairy industry."

The sales materials are arranged in kits, for each of the principal dairy foods. A large full-color symbolic poster,

("beautifully persuasive," says Mr. Kelley), measuring 17 by 22 inches, is included in each kit.

Here are the kits that are now available:

MILK KIT—1 symbolic poster 17 by 22 inches, 4-color, featuring theme "Dairy Foods—Your BEST Buy"; 2 window stickers, printed in green, gummed, 8½ by 11 inches; 1 cottage cheese back bar streamer, 4-color, gummed, 5 by 17 inches; 1 milk poster, "Economy" theme, gummed, 11 by 21 inches; 1 butter milk back bar streamer, 4-color, gummed, 5 by 17 inches.

ICE CREAM KIT—1 symbolic poster; 2 window stickers; 1 ice cream back bar streamer, "Take Home" theme, strawberry ice cream, 4-color, gummed, 5 by 17 inches; 1 ice cream back bar streamer, "Take Home Enough Ice Cream" theme, 4-color, gummed, 5 by 17 inches; 1 ice cream back bar streamer, vanilla ice cream, "As You Like It" theme, 4-color, gummed, 5 by 17 inches.

BUTTER KIT—1 symbolic poster; 2 window stickers; 1 butter streamer "Completes Every Meal," 4-color, gummed, 7 by 17 inches; 1 butter streamer, "It's Better With Butter," 4-color, gummed, 5 by 17 inches.

CHEESE KIT—1 symbolic poster; 2 window stickers; 1 cheese back bar streamer, "Cheese for Every Taste," 4-color, gummed, 5 by 17 inches; 1 cheese back bar streamer, "Make It Easy," 4-color, gummed, 5 by 17 inches.

MISCELLANEOUS ITEMS

Milk folder—4-color, single fold, 3⅝ by 6 inches.

Sticker—1-color, gummed, perforated to make 25 individual stickers size 1¾ by 2⅛ inches.

Wagon cards—Milk—4-color, weatherproofed and trimmed to 11 by 21 inches; "Economy" theme.

Letterheads—8½ by 11 inches on 20 pound sulphite; for imprinting.

Cut out cow display with barn scene and changeable panel.

"It is good, sound business, "adds Mr. Kelley, "to get ready now, by getting the sales materials early, so that you can really cash in when the campaign breaks June first."

●

RESEARCH REPORT

"FOUR RESEARCH PROJECTS are now being carried out by the International Association of Ice Cream Manufacturers as one of the activities of the Public Relations Program," according to Robert C. Hibben, executive secretary of IAICM.

"Research is vital to the continued promotion of ice cream," Hibben stated, "because the results of the projects now can be the claims for consumer recognition tomorrow. Our research activities are a part of the National Ice Cream Nutrition Program and are under the supervision of the National Dairy Council.

Few people realize that four major ice cream projects are being operated at the present time," Hibben continued. "The first of these, 'Ice Cream and Human Physiology' is being undertaken by Dr. Ancel Keyes of the University of Minnesota. It is concerned with the study of the satiety value of ice cream, its nutritional value, its digestibility, and the physiological effect of its coldness.

"The second project to determine 'The Riboflavin Value of Ice Cream' is directed by Dr. Pearl Swanson of Iowa State College and is disclosing the availability to human subjects of the riboflavin found in America's favorite. Studies are also being made to determine the comparative value, as a source of riboflavin, of ice cream compared to other foods.

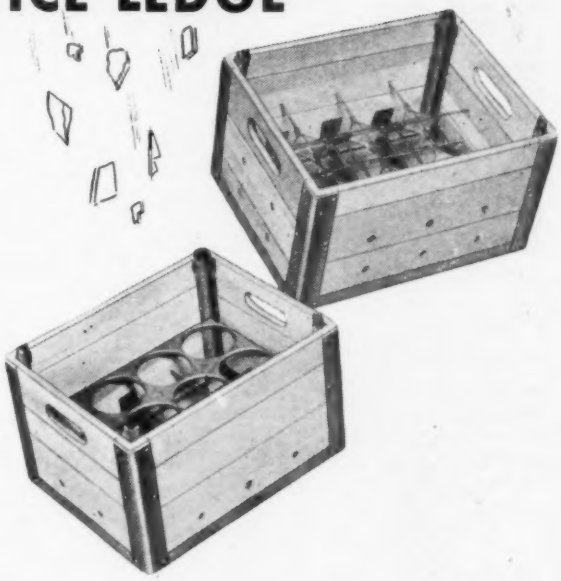
Dr. Janice Smith of the University of Illinois is directing a project 'Mineral Needs of Adolescence' to determine the availability of calcium in milk and ice cream.

"Dr. H. H. Mitchell, also of the University of Illinois, is working with Dr. Smith in studying 'Influence of Cocoa on Calcium Metabolism' to determine to what extent cocoa effects the availability of the mineral in chocolate milk and chocolate ice cream.

"Research is but one of the many activities of the Public Relations Program," Hibben concluded, "and the continued work is available to this industry for the new low rate of three-tenths of a mill per gallon, which is now the basis of our public relations pledges. We hope that all the manufacturers will get on the bandwagon during this pledge drive between now and July 1st to make this expanding work a permanent part of our service to the industry.

BAKER

ICE LEDGE



SHEET DECK CASES

Prepare now for hot weather with Baker Ice Ledge and Sheet Deck cases. Both are fully ironed, available for round or square bottles, quarts or pints. Excellent for ice saving as ice lays on sheet or deck permitting film of ice water to flow down sides of bottles.

BAKER SERVES YOU

This time with an Expansion Program. Now, Baker's plant is being enlarged to take care of the demand for Baker cases. A bigger and better plant to make the "best in milk cases."

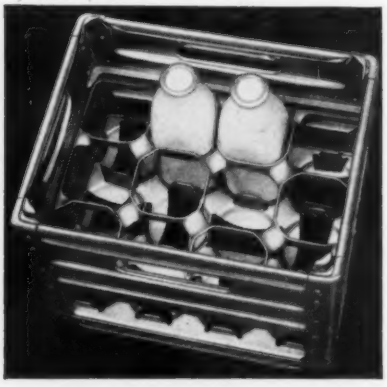
BAKER BOX INC.
WORCESTER 8, MASS.
Mastercraftsmen Since 1855

USING OUR SEPARATOR • ITEMS OF INTEREST SKIMMED FROM HERE AND THERE

Bottom for Milk Cases

A NEW-TYPE BOTTOM for milk cases has been announced by C. E. Erickson Co., Inc., Des Moines, Iowa.

The new bottom, which is now being used in all Erickson cases for square bottles, is said to eliminate all glass-to-



glass contact. All surfaces supporting each bottle are flat or shaped to fit the bottle and there are no sharp points to scar or crack bottles.

In extensive drop tests, the newly designed case has shown resistance against bottle breakage according to the manufacturer.

•

Pipe Joint Compound

A LARGER DIAMETER stick of pipe joint compound called Jumbo Pipetite-Stik for larger threaded pipe is announced by Lake Chemical Co., 607 N. Western Ave., Chicago. It is companion to the regular size Pipetite-Stik introduced two years ago.

Pipetite Jumbo-Stik, like the regular size, comes in handy, clean, easy to use stick form. It is used by simply rubbing several strikes of the stick across the pipe threads. It spreads and fills threads when turned. Jumbo-Stik is individually wrapped in tinfoil for easy handling. The regular stick is supplied in a cardboard holder. Both sticks may be carried around in a pocket or tool kit, always ready for instant use.

Pipetite-Stik is said to withstand Freon, gasoline, oil, butane, propane, sulphur, ammonia, brine, acid, gas, air, water, steam, etc. Joints can be disconnected easily months and years after applying, the manufacturer says.

•

Steel Mixing Paddle

A NEW STAINLESS STEEL mixing and stirring paddle without cracks, crevices or seams is announced by the Nash Metalware Company, Inc., 127 West 17th Street, New York 11. The tool is reported to be fully sanitary and able to meet all health and sanitary requirements.

Developed for the food handling and service market, as a replacement for wooden paddles, the Nash paddle is said to be indestructible in addition to its sanitary features. It has been approved by the New York City Department of Health.

The paddle is made of Nash 18-8 Stainless Steel. Blade is tempered 14 gauge, 8½ inch long, 4 inch wide, handle of 1 inch seamless tubing, all polished

with end cap, welded and ground smooth. Sizes regularly carried in stock (length overall) include: 24″, 30″, 36″, 42″, 48″, 54″, and 60″. Special sizes and types are available.

The Stainless Steel Paddle is obtainable from food service equipment or by contact with the manufacturer.

Better **DRY MILK**

AT LOWER COST
DRY MILK MACHINES
Built in Five Sizes

The patented, glass-smooth, "20-year cylinders" give years and years of maximum production of a superior dry milk at the lowest possible cost.

Many other exclusive features insure long life with low steam and power costs.

Complete details upon request.

OVERTON MACHINE COMPANY
DOWAGIAC MICHIGAN

APRONS

OUR DAIRY SPECIAL

Made from stout waterproof fabric. Bound edges. 2 styles. Slit to fit leg or plain.

IDEAL FOR TRUCK DRIVERS

Special price for quantity
Price delivered prepaid $3.00

FRANKSVILLE SPECIALTY CO.
FRANKSVILLE BOX 3AM WIS.

New Resin Coating

A NEW VINYL COATING IS announced by the AMERCOAT Division of the American Pipe and Construction Co. This coating, called AMERCOAT No. 88, is a pigmented vinyl resin dispersed in water. It has no unpleasant odor either during or after application.

According to the manufacturer No. 88 will resist most dilute acids and is unaffected by alkaline cleaning compounds normally employed as detergents. It resist all aliphatic alcohols and most aliphatic petroleum hydrocarbons. It is waterproof and weatherproof and is unaffected by continuous exposure to all animal and vegetable oils. It will not support growth of bacteria, mold and fungi.

The high solids content of the product produces a thicker film with fewer coats to give greater coverage and better sealing action, it is said.

Any painter can apply No. 88 with a brush or spray gun. It air dries quickly without baking. It can be applied over concrete, masonry or wood surfaces and will not soften or lift old paint. The coating is available in White, solid colors and selected pastel shades.

●

Insect Electrocutor

A 3-IN-ONE ELECTRICAL device built to electrocute rats and mice, night flying insects, and flies has been placed on the market by the Insect Electrocutor Company of Cincinnati, Ohio.

For use against rats, the device which is primarily a grid, is placed against the wall which is a natural runway for rats. The bait is placed on the center of the top wire which is not charged. When the rat comes for the bait he will step through the top grid to a second grid that is charged. Reports of the effectiveness of this device have been highly favorable.

An extension electric light placed in the electrocutor converts the mechanism into a night lantern for outdoor use. Mosquitoes and night flying insects are drawn instinctively to the light and are promptly electrocuted on the grid.

●

Cleans and Deodorizes

A NEW CHEMICAL MATERIAL that will clean and deodorize in a single operation has recently been announced by Oakite Products, Inc., New York.

The new material, known as Oakite Di-Sanite, is a fine, free-flowing powder, mildly alkaline, that is readily soluble in hot or cold water, and which is said to possess pronounced wetting, penetrating and detergent ability,.as well as deodorizing action. Material is safe to use, free from abrasives and harmful ingredients, and its solutions may easily be applied on surfaces by simple sponging, wiping or mopping, the manufacturer states.

Oakite Di-Sanite is effective in destroying objectionable odors at the source in factories, metal plants, textile and paper mills, food plants, institutions, etc.; for deodorizing toilets, shower stalls, wash and locker rooms; and for cleaning and removing odors from interiors of public conveyances, such as railroad coaches, street cars buses, etc., it is claimed.

Soapless Cleaner

THE DIVERSEY CORPORATION of Chicago has announced the development of a new soapless cleaner which has been added to its line of sanitation products for the dairy farm. This product, named Divo, is a wetting-agent type of product fortified with special materials that, according to the manufacturer speed up cleaning and provide greater sudsing and water softening actions. Divo is said to be harmless to surfaces and easy on hands. Designed for cleaning milk pails, strainers, cans, milking machines and other dairy farm utensils, the cleaner can also be used for household cleaning, including dishes,

Seamless
Solderless
Superior
BAFFLE CUP STRAINERS

HIGH OR LOW HANDLES, IN 12 TO 18 QUART CAPACITY FOR 6½" OR 7½" DISCS

A new idea in strainers . . . the new baffle cup prevents swirling, protects the disc against washing, channeling or breakage. Fast, positive, sanitary and economical . . . low in price . . . Superior baffle cup strainers deliver the maximum in efficiency and service.

Write for information on the complete line of Superior milk strainers . . . and for our catalog on all Superior metal dairyware.

Superior METAL PRODUCTS COMPANY
509 FRONT AVENUE ST. PAUL 3, MINNESOTA

the family wash, bathrooms, etc. The product is packaged in 62 ounce containers and is now available. Complete information can be had by writing to The Diversey Corporation, 53 W. Jackson Blvd., Chicago 4, Illinois.

Insect Control System

ENOZ "FOG" a method of destroying insects has been developed by the Diversey Corporation. The system consists of two units. The first unit is an insecticide which, though powerful enough to destroy insects, is non-toxic to humans and domestic animals. The second part of the system is a means of distributing the insecticide. This is accomplished by means of a vaporizer which produces the "fog". The fog is an artificial mist made up of extremely fine particles which, according to the Diversey Company "permeates the largest or smallest areas and penetrates the tiniest cracks and crevices which harbor insects."

The system is already on the market and available to the trade.

Paint for Dairies

A NEW SYNTHETIC PAINT that was built to "stand up under the constant cleanings and wear and tear of milk plants and creameries" has been introduced by Lowobco, Inc., of Chicago. The paint is marketed under the trade name of "Oncrete for Concrete".

According to the Chicago concern the paint is free spreading and dries to a hard, glossy finish in three or four hours. It seals concrete surfaces from moisture above and below, the manufacturer says, and expands and contracts with the material covered. It is said to resist acids, alkalis, and extreme degrees of heat and cold.

For milk plants and creameries the new paint can be used on floors and wall of milk and cream processing rooms as well as on radiators and pipes in offices, storage areas, receiving and shipping rooms, etc.

WANTS and FOR SALES

RATES: "Position Wanted," 50c. Limit of 50 words; 2c for each additional word. All other advertisements, 5c a word ($1.00 minimum). Keyed ads, 15c extra to cover return postage. The name and address should be included in counting the words. All payments strictly in advance.

Replies to keyed ads should be sent to the box number, care of Urner-Barry Co., 173 Chambers St., New York 7, N. Y.

FOR SALE — EQUIPMENT

FOR SALE—One 1,000 gal. Creamery Package No. 641 Coil Pasteurizer, Motor driven, in FAIR condition; One 2½" Standard Coil only for 650 Gal. C. P. Pasteurizer—new; One double compartment stainless steel Lathrop Paulson Weighing Tank, 1,000 lbs. each compartment, in very good condition. Galloway-West Company, Fond du Lac, Wisconsin. 4-M

FOR SALE—Several used 96 case Fort Wayne sterilizers for cans of evaporated milk. Complete, motor driven with motor and in good condition. Prompt shipment. Otto Biefeld Co., Watertown, Wisconsin. 4-M

FOR SALE—One No. 4 Jr. DeLaval Separator, 12 Haynes Roll-Easy Case Dollies, one 150 Gal. Oakes & Burger Pasteurizer with foam space heater, one Taylor Recording Thermometer, one 20 h.p. Farquhar Horizontal 150 lb. Pressure Boiler and one 1947 Deliver-All Truck. Bay Point Farm, Suffolk, Va. 4-M

FOR SALE—Largest assemblage of Used and Reconditioned Machinery under one roof. Good selection of Pasteurizers, Coolers, Bottle Washers, Bottle Fillers, Can Washers, Homogenizers, Pumps, Surge Tanks, Storage Tanks, Heaters, Separators, Weigh Cans, Filters, Ice Cream Freezers, etc. Write or wire your particular requirements and plan to visit our warehouse and shop. Lester Kehoe Machinery Corporation, 1 East 42 nd St., New York 17, N. Y. 4-M

FOR SALE—5 H Hooding Machine, 40 bottles per minue; hand operated gallon jug filler with copper-head attached; Tubular 10,000 lb. per hour milk heater, will need a little repair; 50 h.p. Gas engine attached to 1 k.w. 220 volt 60 cycle 3 phase generator. Newport Dairy, Newport, Kentucky. 4-M

FOR SALE—One 8 wide Model B Multisoak Cherry-Burrell bottle washer, recently overhauled by factory mechanic. Reasonably priced. One 15 h.p. O & S Upright steam boiler in good condition. Reed Milk and Ice Cream Co., 12 S. First St., Shamokin, Pa. 4-M

FOR SALE—One 42" Rogers Stainless Steel Vacuum Pan, complete. Excellent condition. The Riley Creamery Co., Marlette, Michigan. 4-M

FOR SALE—The following new equipment: One Anheuser-Busch 120/145 gallon Hardening Cabinet; one 1½ h.p. Air Cooled Compressor with Single Phase Motor; One 5 gallon Emery Thompson Freezer with 3 h.p. water cooled Compressor and motor; one Schaefer 12 hole portable Ice Cream Cabinet with 1/3 h.p. Hermetic unit; One used Cheese vat, 10M pound capacity; One used Cheese vat, 6M pound capacity; One used Simplex 14' I.T. milk Heater or cooler; 2 used small Surface Coolers. Write Box 271, care this publication. 4-M

FOR SALE—2 Rogers 6' diameter by 14' straight side copper Vacuum Pans, 5 double coils each; 2 Mojonnier 5½' sides by 7' diameter, 3 double coils and copper bottoms each; all complete with barometric leg condensors, vacuum pumps, steam headers and valves, all pans completely reconditioned good as new by Rogers' coppersmith. Also 6 Copper Hotwells; two 5' x 5'; four 6' high by 4' diameter. Lock Box 215, Eau Claire, Wisconsin. 4-M-4

FOR SALE—One 80-quart Emery Thompson Direct Expansion Freezer in good condition and in operation. We are installing continuous freezers. M. C. Coppin Dairy, 122-124 N. Bloomington Street, Streator, Illinois. 4-M

FOR SALE—2 Factory Built Retail Milk Wagons. Very good condition, only $300.00 each, with Tires and Tubes. W. D. Wright Produce Company, Hobart, Oklahoma. 4-M-2

FOR SALE—One G70 Nuline Filler, 8S Bowl with 3, 4S & 3, 5I MM Plug Cappers; One GV7 Gray Vac. Bottle Filler, Meyer Dumore Conveyor infeed-outfeed with 3, 4SMM Cappers; One 35 H.P. Dutton Portable Economist Boiler, new; One 200 gallon Spray Pasteurizer, Alum. cover; 200 gallon Spray Pasteurizer, SS cover; Taylor recording thermometers No. 64R647, Chart OP1749; E29 DeLaval Separator; one 4 Wide Model Can Washer, hand feed and pick off; lot bottles and cases; 100 gallon Spray D. model 100, SD816 Pasteurizer; one 4 Wide Meyer Dumore Jr. Bottle Washer; 2 chill chasers, A7223, A7224; one Tubular Cooler 10—1½" tubes 6 ft., water, 10—2" tubes 6 ft DX Ammonia Top Bottom troughs ammonia controls. I. N. Hagan Ice Cream Co., Uniontown, Pa. 4-M

NEW — INTERESTING — USEFUL

MAGIC CREAM SIPHONS, for home use, remove cream from bottled milk, for use with coffee, cereals and desserts.

PLEASE OLD CUSTOMERS— WIN NEW FRIENDS

Leading dairy firms find Magic Cream Siphons a welcome sales booster aid. Housewives appreciate them and homes using a cream remover will consume more milk, when convinced by experience that many dishes are improved by the liberal use of milk instead of water in cooking. Free sample, for round or square bottles. Two models are made.

$15.00 per gross-$100.00 per 1000

Complete Satisfaction Guaranteed

MERIT MANUFACTURING COMPANY

3455 EAST 150TH STREET CLEVELAND 20, OHIO

We have DECLARED WAR on the hazards of handling

CORROSIVE SUBLIMATE TABLETS

Watch for Our Announcement — Nothing Like It on the Market

Our Tablets are SUPERIOR HIGH in QUALITY —— LOW in PRICE

WRITE TODAY ★ IT WILL PAY DIVIDENDS

Unēk Products Company

DEPT. T OCONOMOWOC, WISCONSIN

FOR SALE—1 specialty brass I.T. cooler, 10—2″ Stainless Steel milk tubes, 14′ 0″ long, practically new. Fair Lawn Dairy Farms, 5-01 River Road, Fair Lawn, New Jersey. 4-M

FOR SALE—Six 1941 Divco Trucks—Model "UM"—Excellent conditions. Apply Fair Lawn Dairy, 5-01 River Road, Fair Lawn, New Jersey. 4-M

FOR SALE—Used Milk plant equipment. Fine selection. Otto Biefeld Co., Watertown, Wis. 4-M

FOR SALE—Doering 500 Lb. Printer, Model N-B, Ser. No. 2228, purchased new Oct., 1944. Also DeLaval Separator No. 52 with built-in motor. Both machines in excellent condition. Level Valley Dairy Co., Route No. 1, West, Bend, Wisconsin. 4-M

FOR SALE—Milk truck, 1941 Divco 50 case stand-up delivery in very good condition. Price $1,200.00. Also 5 h.p. Lookout flueless boiler, $100.00. Launstein's Dairy, Mason, Mich. Phone 7673. 4-M

FOR SALE — MISCELLANEOUS

FOR SALE—Chocolate Milk made with Bradway Non-Settling Chocolate Syrup and Powder is superior. Place your trial order now. BRADWAY CHOCOLATE COMPANY, New Castle, Ind. 4-M-t.f.

FOR SALE—Used milk bottle crates. Can deface old name and rebrand. Write or phone for present day inventory. Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland, Ohio. 4-M-t.f.

FOR SALE—Practically new 2M milk cases for quart, square bottles. Will accept best offer. Box 270, care this publication. 4-M

BUSINESS OPPORTUNITIES

DAIRY—Located in Central Wisconsin. Present volume 1,000 qts. daily plus other pasteurized products. Only dairy in City. Write Box 269, care this publication. 4-M

FOR SALE—Milk business in large city in New York State, about 1,000 qts. pasteurized retail daily. Completely equipped—room for expansion. Price $14,000. Terms. Box 268, care this publication. 4-M

WANTED

WANTED—SKIM MILK, year round; New York State plant or nearby. Plant must have facilities for cheese making. Box 265, care this publication. 4-M-t.f.

WANTED TO BUY—Milk Bottling Plant—Equipped with American Can Container Machine. Box 266, care this publication. 4-M

IMMEDIATE DELIVERY

S. Pinn & Son offers immediate delivery from all your steam problems.
Boilers and Machinery Installed.
Plants Modernized.
Steam and Conservation Surveys
(Eastern Territory Covered)
S. PINN & SON
1271 Hoe Avenue New York 59, N. Y.
4-M-t.f.

WANTED—Skim milk year round on contract basis. Will use twice as much in flush period as rest of year. Can also use surplus cream. Will also consider buying an interest in a creamery located within 250 miles of Philadelphia where good milk supply is available. Can be approved or unapproved for Pennsylvania. Box 273, care this publication. 4-M-3

HELP WANTED

WANTED—Plant Manager for pasteurizing plant located in New Jersey, handling about 100 cans milk daily. Box 267, care this publication. 4-M

WANTED—Corrugated Box Salesman, to call on firms in various food industries who use corrugated cartons. Excellent opportunity for right man having good contacts. No previous experience necessary. Potential earnings high. Box 272, care this publication. 4-M

POSITION WANTED

CREAMERY FOREMAN—Experienced. Small bottling plant preferred. Can make sour cream, butter milk, cheddar cheese. Test and standardize milk and cream. Familiar with country and city Board of Health rules. A. C. Libby, 1579 E. Lafayette Avenue, Bronx, New York City, c/o Newton. 4-M

PENNSALT NAMES SALESMAN

Philadelphia—The Pennsylvania Salt Manufacturing Company today announced appointment of Charles R. Sorber, Jr., of Philadelphia, as St. Louis, Mo., district sales representative for Pennsalt's Special Chemicals Division.

Mr. Sorber, a graduate mechanical engineer from Pennsylvania State College, has served three years in the Navy in the Pacific. Prior to joining Pennsalt last September he was a sales engineer with Proctor & Schwartz, Inc.

Mr. Sorber's territory will include all of Missouri and the southern section of Illinois.

SOLVAY PROCESS ANNOUNCES

A comprehensive report on Lithium Hypochlorite has been prepared by the Product Development Department of The Solvay Process Division, Allied Chemical & Dye Corporation, and is designed to give prospective users accurate data on the chemical and physical properties of this unusual material.

Since Lithium Hypochlorite is not being made commercially, this report has been prepared primarily for technical and research men as a guide to possible applications in such fields as farm and industrial sanitation, home laundering and bleaching, and in specific germicidal and fungicidal applications.

A free copy of this book may be obtained by writing Product Development Department, The Solvay Process Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y.

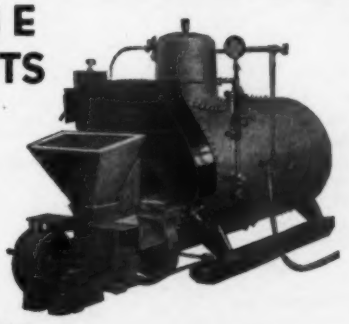
●

GREEN SPOT REPRESENTATIVES

Appointment of two new representatives has been announced by Green Spot, Inc., Los Angeles producers of citrus juice concentrates. Herman Melin, Dayton, Ohio, will represent the firm in the Indiana-Ohio territory, working with established dairy supply jobbers distributing Green Spot in that area. Jack Hedford has been appointed in the interests of dairy supply jobbers in Florida, headquartering in Daytona Beach. Both men are well and favorably known, each having spent a decade or more in the dairy industry.

Anticipated demand for Green Spot as a result of a national advertising campaign scheduled for the spring and summer months will probably keep both men on their toes, according to W. R. Thomas, president of the firm. The campaign, biggest of its kind in recent years, will sell Green Spot Orangeade each month to 61,500,000 readers of the *Saturday Evening Post, Life, Ladies Home Journal, Women's Home Companion* and *Parents Magazine.*

LEFFEL SCOTCH MARINE BOILER AND STOKER UNITS



Generate Dry Low Cost Steam with the Proven Service and Safety of Leffel Scotch Marine Boiler and Leffel Ram Type Stoker

We build stokers for other makes of Scotch type boilers.

Leffel boilers are ideally suited for oil or gas firing.

Available in sizes 6 to 250 H.P. inclusive normal (not inflated) rating, – and built with many plus qualities exceeding A.S.M.E. and State Boiler Codes.

Write, wire or phone us for full particulars.

THE JAMES LEFFEL & CO. Established 1862 **Springfield, Ohio**

See Leffel Boiler Ad on Page 60 Dept. MR

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OF EVENTS TO COME

American Bulk Condensed Milk Association—Annual meeting, Edgewater Beach Hotel, Chicago, Ill., April 19, 1948. H. C. Darger, 1 N. LaSalle St., Chicago 2, Ill., Executive director.

National Dairy Council—Summer conference, Edgewater Beach Hotel, Chicago, Ill.; June 14-16, 1948. Milton Hult, 111 No. Canal St., Chicago 6, Ill., President.

American Dairy Science Association—Annual convention, University of Georgia, Athens, Ga., June 14-16, 1948. R. B. Stoltz, Ohio State University, Columbus, Ohio, Secretary.

Certified Milk Producer's Association of America, Inc. — Annual Convention Avalon Hotel Waukesha, Wisconsin, June 18-21. Luther Kohr, Executive Secretary, 1265 Broadway, New York 1, N. Y.

Illinois Dairy Products Association—Summer party sponsored by Boosters Association will be held at Nippersink Lodge, Genoa City, Wis., June 22 to 24. For reservations and additional information write Executive Secretary M. G. Van Buskirk, Illinois Dairy Products Association, 309 W. Jackson Blvd., Chicago 6, Ill.

World Dairy Congress—Twelfth meeting will be held in Stockholm, Sweden, August 15 to 19, 1949. For additional information, write XII Internationella Mejerikongressen, Postbox 642, Stockholm, Sweden.

International Dairy Congress—Twelfth international meeting will be held in Stockholm, Sweden from August 15 to 19, 1949. Enquiries concerning the congress should be addressed to XIIth International Dairy Congress, Post Box 642, Stockholm, Sweden.

Indiana Dairy Products Association—Annual convention will be held at the Claypool Hotel, Indianapolis, Ind., September 20-22, 1948. Executive secretary, C. C. Hadley, 622-24 Board of Trade Bldg., Indianapolis 4, Ind.

New York State Association of Milk Sanitarians—Annual convention, Hotel Statler, Buffalo, N. Y., September 22-24, 1948. C. S. Leete, New York State Department of Health, Albany, N. Y., Secretary.

Dairy Industries Exposition—Atlantic City, New Jersey, October 25-30, 1948. Roberts Everett, 616 Albee Bldg., Washington 5, D. C., Executive Secretary.

International Association of Ice Cream Manufacturers—Annual convention, Atlantic City, N. J., October 25-27, 1948. R. C. Hibben, 1105 Barr Bldg., Washington 6, D. C., Secretary.

Milk Industry Foundation—Annual convention, Atlantic City, N. J., October 28-30, 1948. E. B. Kellog, 1001 - 15th St., N. W., Washington, D. C., Secretary,

Iowa Milk Dealers Association—Annual convention will be held at the Hotel Fort Des Moines, Des Moines, Iowa, November 12 and 13, 1948. Secretary, John H. Brockway, 908 Walnut Bldg., Des Moines 9, Iowa.

●

CHAIN BELT ELECTS

L. B. McKnight and O. W. Carpenter were elected directors of Chain Belt Company at the annual stockholders meeting held recently at one of the company's West Milwaukee plants.

Mr. McKnight was recently elected a Vice-president of Chain Belt Company with executive responsibility for the two heavy machinery divisions of the company.

Mr. Carpenter was also recently elected a Vice-president of the company in charge of finance.

Chain Belt Company manufactures chains for conveying and power transmission; all types of conveyors and specialized process equipment; and construction machinery, many of which find uses in the country's dairy plants.

FROZEN MILK

(Continued From Page 18)

appears on the retail market as a frozen food, it is likely to compete primarily with evaporated milk as a product to be kept in the home freezer as a reserve milk supply for cooking purposes just as canned milk is proverbally referred to as the "cow in the pantry". It would have two advantages over evaporated milk. The flavor is much more natural than the canned milk and the concentration would probably be greater. This last feature might conceivably lead to new uses for milk in the kitchen. The only advantage frozen concentrated milk might have over fresh bottled milk would be that of price and at present it is impossible to guess what this might be. It would have the disadvantage of being far less convenient to use and the flavor, while fairly good, would not match that of the fresh fluid product.

Three Being Explored

Three frozen milk products have been discussed. One, bulk frozen concentrated skimmilk is now being used, in a limited way: commercially, for preserving milk solids—not—fat for later use, usually in ice cream. It has some advantages over other storage products and probably will be used more generally for this purpose. Another, frozen homogenized fluid milk, proved very satisfactory as a preserved substitute for fresh fluid milk for Army uses during the war where expense was not a limiting factor. It is unlikely, however, to become an important commercial article in the peace-time economy. The third, frozen concentrated whole milk can be employed for storing whole milk solids in bulk form and may at some future time appear on the retail market as one of the increasing number of frozen foods which can be held on hand in the home freezer or individual locker by the consumer. All three of these products are examples of an old method of frustrating nature's demolition corps the microorganisms, but they represent new foods protected by such means.

●

BORDEN OFFICIAL RETIRES

Dr. R. J. Carver has retired as director of production for the Mid-West District of the Borden Company and as vice-president in charge of production of Borden's Dairy & Ice Cream Company in Columbus, Ohio. He will be succeeded by J. Hoffman Erb.

Dr. Carver has been with Borden's for 29 years. A graduate of Ohio State University's College of Veterinary Medicine, he was formerly chief food inspector of the Columbus Department of Health and plant superintendent at Moores & Ross.

XUM

Glass bottles, preferred overwhelmingly by consumers, now have a *new* king! Distinctive Handi-Squares are homemakers' choice 9-to-1. Consumers like the square shape for its easy handling and pouring. Their preference means more sales for you!

Carry 50% more cases per truck

Handi-Squares give you more space in trucks, coolers and cold rooms!

Now you can service larger areas—fill the increased demand for milk—without investing in additional trucks. And your drivers have more profitable selling time.

3 cases of Handi-Squares fit easily in the same space as 2 cases of round bottles. You increase load capacity of route trucks an average of 50%!

Stock more bottles in coolers

In Handi-Squares, retailers not only have milk the way consumers prefer it—*in glass*—but can sell more milk because they can stock up to 50% more bottles per delivery in refrigerators and self-serve coolers.

Store more cases in cold rooms

For example: In a 20-foot square with cases piled seven high—no aisles between—you stack 2,240 Handi-Square cases compared to only 1,456 standard-round cases. An increase in storage space of 53.8%—*without extra construction costs!*

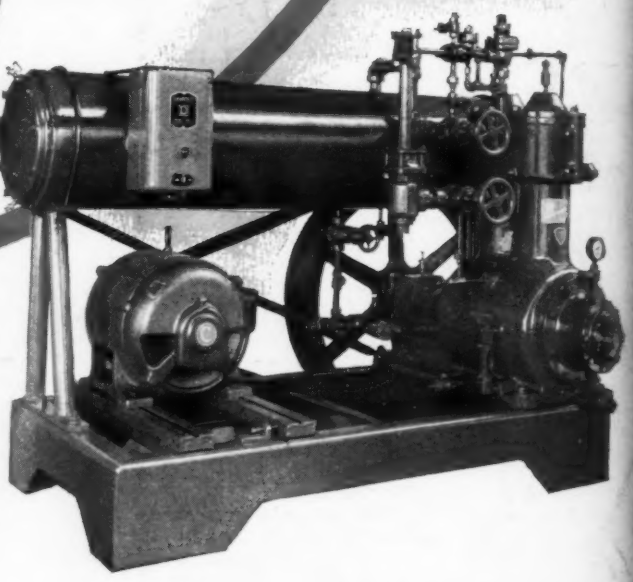
In every way it pays you to use Duraglas Handi-Square bottles. First and most important, your milk gets the trusted protection of glass and the unequaled economy of the returnable bottle . . . PLUS the greater operating efficiency brought by Handi-Squares.

Call on us for further details.

Use this space for your name, trade mark or sales message in economical Applied Color Lettering.

Duraglas TRADE MARK REG. U.S. PAT. OFF. **HANDI-SQUARE BOTTLES**

OWENS-ILLINOIS GLASS COMPANY • Toledo 1, Ohio—*Branches in Principal Cities*



MARINE TYPE

(Self-Contained)

COMPRESSORS

If you need a compact, efficient refrigerating unit, in a capacity range of 6 to 8½ tons, you'll welcome the news that CP 5 x 5 Marine Type Self-Contained Compressors are now available for reasonably prompt delivery.

This unit—designed and built by an organization that has specialized in the development of dairy and food processing machinery for more than 60 years—consists of a CP Vertical Compressor with 5 x 5 inch twin cylinders cast enbloc. All accessories such as stop valve, suction scale trap, oil level gauge, relief valve, and high and low pressure ammonia gauge, automatic water regulating valve and high pressure cutout are included. Furnished for either hand or automatic control. Write for Bulletin V-99, and delivery dates.

THE *Creamery Package* MFG. COMPANY

General and Export Offices: 1243 W. Washington Blvd., Chicago 7, Illinois

Atlanta • Boston • Buffalo • Chicago • Dallas • Denver • Houston • Kansas City, Mo. • Los Angeles • Minneapolis • Nashville • New York • Omaha • Philadelphia • Portland, Ore. • St. Louis • Salt Lake City • San Francisco • Seattle • Toledo, Ohio • Waterloo, Ia.

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THE CREAMERY PACKAGE MFG. COMPANY, LTD.
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